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FOREIGN LANGUAGE STUDY AND REQUIREMENTS

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ADDRESS OF PRESIDENT SEMPLE AT THE ANNUAL MEETING

I (At the Annual Dinner).—I wish to lay emphasis upon the fact that the activities of the American Association of University Professors, not merely in non-controversial fields, but also in the very widely discussed and much misunderstood field of academic tenure, are cooperative. I would lay all the emphasis which I am capable of summoning upon this assertion. The progress and development of the question of academic tenure is to be hoped for and striven after mainly through a full and frank discussion on the part of the two parties in question, the clarification of the issues involved and the earnest, mutual cooperative endeavor to settle these matters with the sole purpose of serving the best interests of higher education in America.

It was really odd to perceive at times how quickly and how vigorously I have responded to the suggestion, half humorous, half serious, on the part indeed of some of our best friends among administrative officers that the American Association of University Professors is a "professors' union." One is treading upon somewhat dangerous ground when one uses the expression "professors' union." It may, however, serve to clear the atmosphere to meet openly without undue heat of feeling a point of view so widely held. It is, of course, perfectly true that when you have two bodies of men, one of whom consists of employers and the other of employed, there immediately arises an unavoidable clash of interests. This situation is equally applicable to steel workers in a mill and to college and university professors. If one considers all labor, whether that of the hand or the mind, or the combination of hand and mind, in its deep philosophical aspect, then all sorts of labor come under the category of religion, that is to say, the services are not performed for the sake of earning the daily bread, but form the principal human offering to the Divine Creator. In this sense all labor is sacred.

This definition, however, does not meet the whole situation. As in all other human affairs, so also in that of labor, there are degrees of difference as to the emphasis laid upon the moral and the spiritual aspects of that labor. As the labor rises in moral and spiritual values, so also does delicacy in the relationship between employer and employed increase. The term "labor union" in the minds of men generally connotes, if it does not actually denote, that the emphasis

in this struggle is laid upon the purely economic features of the struggle and furthermore that the methods employed are of the cruder nature of physical and material pressure for the gaining of the ends sought, rather than the recourse to reason and argumentation. In other words, the attitude is that of warfare, a belief that the interests of the two parties are absolutely contradictory and that only by the conquest of one or the other of the fighting bodies can the question be settled.

If I am right in my definition of the term "labor union" as loosely and generally employed even by the more intelligent and discriminating, I believe that I am justified in feeling a sense of indignation that any one should suggest that in this sense the term is applicable to the American Association of University Professors. To repeat what I said a few moments ago, the activities of the American Association of University Professors, not only in non-controversial fields but very particularly in the field of academic tenure are, and of necessity must be, a cooperative endeavor. The basis of the whole discussion must be that the sole objective of both administrators and professors is the education of the youth of our country. We of the professors must admit an honesty and seriousness of purpose on the part of administrators, and that where we differ these differences are to be settled upon the basis of mutual counsel and of mutual concession. Our demands must be based not upon profit of a class but upon the good of the whole. The only way, humanly speaking, that this good of the whole can be attained is by the clarification of the ideas of those who represent the two groups, brought about by conference and discussion and formulation of the results of these conferences. For example, I have talked with a college professor who thought that all college presidents were crooks, and congenital liars and cheats, that there was no honesty in them, and that all they did was to grind down the professor in order to magnify themselves. On the other hand, I have often perceived on the part of administrators when this topic of conversation has arisen, a tendency to avoid any consideration of their obligations to foster the value of those professors whom they have engaged to serve in the institution; rather on the other hand, they occupy their whole attention with pointing out the shortcomings of college professors, how very poorly they perform their duties, and how difficult it is to carry on the work of increasing efficiency in their own institutions with this millstone of inefficiency on the part of the professors hanging like a dead weight about their

necks. One would conclude that their occupation was in relieving themselves of the services of these pitiful hindrances to the progress of enlightenment.

We shall all agree that both of these points of view are extreme and therefore quite to be condemned. They do not assist the work. It is sometimes, however, a little disheartening to perceive even in the best of us a remnant of this attitude remaining in the backs of our minds to rise to the surface at inopportune times, thus causing a frigidness to creep into a conversation which seems to be approaching a common ground of agreement. There is a common ground of purpose between the administrator and the professor and in all our conferences the emphasis must be laid upon this common ground. The professor must appreciate the difficulties under which the administrator works and the administrator must understand and sympathize with the desires of the professor that the quasi-legalistic position of his professorship be made as definite and as assured as possible in order that the professor may be able to devote his whole energy to the performance of his real work in the world, increase of knowledge, and the instruction of the young. I, therefore, urge that all of us, both administrators and professors, make a new resolution to come together in kindliness and harmony and oneness of purpose in order that we may in the future advance with steady and sure tread toward the solution of our problem.

II (At the Closing Session).—Members of the Association, that concludes the program with the exception of the "round table discussion of policies and plans of the Association." I have been thinking about this a great deal. My idea of the occasion was at least two hours with a great deal of blackboard work, organization of thought, presentation of ideas, but I don't think that would be wise now. Last night was mainly devoted to emphasis upon the cooperative nature of our undertaking, today a severe analysis of our organization as a working machine is in order.

Until five years ago we were a small organization, working out our ideals. In the course of the six or eight years of the existence of the organization, we had formulated a large number of policies. It has devolved upon the officers to carry out those policies. How are the officers going to carry out the policies of this organization? We have assumed an enormous number of obligations and our way now of doing things by correspondence, almost entirely by asking

this or that college professor to do the work of the organization, isn't going to continue to function, with full efficiency. We are in the half-grown state. We are too large an organization to function as we have been, and we are not large enough to finance the sort of functioning that we ought to have.

It seems to me that we have to concentrate the executive authority of this organization and widen out the legislative basis of it. We have thirty-five or forty members on the Council, and without any criticism of that whole Council, in my two years, you could count on the fingers of two hands those who have had the opportunity to participate in the directing of the policies.

I do not mean to say that we do not function very well, indeed I think we do, considering the handicaps under which we labor. But I do feel that the executive functions of the organization have to be invigorated; it must be made possible to come to quick, definite conclusions. The danger lies in this, if you concentrate that into one or two hands and the decisions are wrong, you soon get your organization into difficulties. How are you going to meet that? Secretary Tyler, in Boston, and I, in Cincinnati, have had to make decision after decision and we should have much preferred to make them only after very wide consultation.

From the organization point of view, we must concentrate our executive decisions, but broaden out the immediate basis of advice. The only suggestion I can make is that the contact between our executive officers and our Council members be made effective, and how are we going to do that? The Council members will have to be brought in, let them perhaps be considered as our legislative, our advisory council.

I make the suggestion that all the business carried on by the Secretary and President should be formulated, all the correspondence that goes through those two offices, to have someone to brief it at certain times, weekly or bi-weekly, and send that to the Council members and keep them in touch with what is going on, and if there is an important question for decision, see that they reply. Do it by telegraph, any way to get it. It shouldn't be a matter of mere publication in the *Bulletin*.

I do hope that my successors will consider that question very vigorously. I look forward with confidence to our organization attaining a membership of 12,000. There are about 25,000 college professors; we ought to have 12,000. That would raise our budget

to about $40,000 and if we keep our heads, if we act with intelligence and discretion and work together with the other organizations which are of the same nature as ours in fundamental principle, we have a large work within our power.

There is one other point I have been thinking about a great deal. The correspondence and personal contact in various parts of the country, Boston to Los Angeles, which I have had in the course of the past two years have revealed an amazing ignorance of what we are trying to do. I haven't gone anywhere or said anything to anybody that a large part of my endeavor has not been to clarify the minds of those with whom I was speaking as to just what the organization is trying to do. We must educate our intelligent public as to the purposes and the practices of the American Association of University Professors. It seems to me that we have an obligation to get our affairs before the intelligent public over the country. We must consider and organize the possibilities of presenting our affairs in a dignified manner.

I had the notion that somebody of a real literary turn of mind who could write something that would be read would take hold of this. There is a tremendous amount of human interest in the activities of this organization; there are some dreadful tragedies that come to our attention. If someone who had a facile pen could become acquainted with many of these things, I feel very sure that it could be treated in a dignified, tactful manner. I am merely bringing this up as a suggestion in the hope that some day not so very far off we shall pick up a widely read magazine with an article not on the American Association of University Professors—but an article that starts out with a generalization and then uses the material which this organization has so richly to offer to illustrate the point.

W. T. SEMPLE

THE NEW PRESIDENT'S MESSAGE

To the Members of the Association:

This organization was conceived in a spirit of good sportsmanship. Cooperation is written large in the first article of our Constitution. The charter-members, and especially the three leading spirits among them, clearly recognized the need for more conference and less regimentation in university control.

Their ideas led to action in 1913, when this Association met and shortly after put into motion three important agencies for formulating "the best professional opinion on all that touches the public work of our career" (Wigmore) and for securing public approval of the view that the primary "responsibility of the university teacher is to the public itself and to the judgment of his own profession" (Seligman). During these fourteen brief years, the parity between *rights* and *duties* has never been lost to sight; much has been done to make clear the distinction between *loyalty* and *subservience;* the difference of status between *appointee* and *employee* has also been clarified.

Wise and enlightened college presidents already know that we are quite as much concerned with the elimination of the incompetent as with the promotion of the talented; they see that our main purpose is neither defensive nor offensive, but cooperative; they know that we believe the American college can be an effective aid to the state only if high standards of teaching are preserved.

This Association is interested in the student as well as the professor. For the student, we have insisted that the American college must substitute for its present system of bookkeeping and credits, a system that will create intellectual interest, teach good method, and produce habits of clear thinking, tolerance, and wide reading. These are ideals not to be realized through any amount of brick, mortar, and material equipment.

To say that an enlightened public opinion has accepted these ideals would not be too rosy a view provided the phrase *enlightened* is properly defined; but to say that these views are accepted in general practice would be a statement far too optimistic.

Our task for the coming year is therefore clear cut. More cooperation between Administration and Faculty which can be realized only when men have the courage to lay their minds alongside one another; only when truth rather than authority has been made

the basis of discussion. This close contact of mind with mind then becomes an intellectual exercise of high order; tolerance becomes natural; the academic atmosphere clears; and the dissatisfaction that ordinarily follows the settlement of important human problems through an individual referee vanishes.

A problem which touches every one of us is that of making scholarship respectable; this difficulty has been solved in only a few institutions. The question how to make society and athletics ancillary and really helpful to the main and intellectual purpose of the college has also been answered in only a few places.

Let us hope for distinct advance in securing public approval for our matured and well-considered views on these questions. The ideals of an association such as this are its only valuable possessions. The problem before us is to convert them into honored traditions. We have moved far, but much ground remains to be covered.

HENRY CREW

COMMISSION ON MEDICAL EDUCATION[1]

Last year Dr. Zapffe, Secretary of the Association of American Medical Colleges, presented the organization and general purposes of the Commission on Medical Education and also gave the personnel and representation on that Commission. I come before you today to report in a general way the progress we have made and to indicate some of the questions that we have been taking up.

Thus far we have dealt largely with the general questions of medical education. I shall just touch on one or two of those to indicate their nature.

Probably most of you know that medical education is regulated by the rules and specifications of three general agencies: namely, the American Medical Association, through its Council on Medical Education and Hospitals, the Association of American Medical Colleges, and the laws of the various states governing licensure to practice medicine. These last regulations are rather rigid and are different in each state. They frequently cover in great detail the subjects to be taught, the length and sequence of courses, and other features of the medical curriculum. The results of all these regulations have been a marked rigidity in medical education, a very considerable overcrowding of the medical curriculum owing to the prescription of different subjects by different states and to the overregulation of the details of medical training.

The opinion is growing throughout the country that many of these matters should be left to the medical schools to work out in keeping with sound educational principles, and action will this year be taken by certain states to liberalize this rather unsatisfactory situation. Some of the states are about ready to discontinue certain requirements of this character that they now have and confine themselves largely to more general matters of educational policy. Some believe that they should conduct examinations only in clinical medicine and substitute comprehensive examinations for the individual examinations in separate subjects which are customary in most states at the present time.

Another question is the capacity of the present medical schools of this country. Probably most of you do not realize that in 1904 we had one hundred and sixty-six medical schools in this country and today we have sixty-one Class "A," four-year medical schools.

[1] Informal report

In addition to the Class "A" medical schools there are eight schools that have Class "B" or Class "C" rating. Furthermore, there are ten medical schools that have only a two-year course. There are are only sixty-one schools graduating physicians at the present time who conduct training on a standard that is generally recognized. The present output from all medical schools is approximately four thousand physicians per year. It is interesting to know that in 1904 to 1906 we had an average of approximately twenty-eight thousand students studying medicine; today we have less than nineteen thousand. These results have been brought about largely by the elevation of standards, the consolidation of schools, and elimination of proprietary schools.

There is little doubt that there has been an oversupply of physicians in this country in the recent past. We are now entering the period when there is likely to be a decline in the number of doctors in the country. At present there are one hundred and twenty-nine thousand practicing physicians sixty-five years of age or younger; in 1945 there will be one hundred and forty-four thousand, an increase of fifteen thousand in the next twenty years. These studies are based on life expectancy worked out by actuaries and are reliable as far as one can predict future conditions.

The proportion of physicians to population is much more significant than the actual numbers. At present there is one practicing physician to about nine hundred individuals. The problem in this connection is not so much the number of physicians as the distribution, particularly in relation to the rural districts and the concentration of physicians in the cities. The great majority of recent graduates are locating in communities of fifty thousand or greater. In 1945 we shall have forty per cent more population per doctor than we have today. We shall have one physician at that time for approximately one thousand two hundred and fifty persons. From that point on to 1965 the situation will be stabilized at one to one thousand two hundred to one thousand two hundred and fifty. That does not necessarily mean there is going to be an acute shortage because the character of and demands for medical services are changing considerably.

Another question is the application of students for admission to medical schools. Last year there were over twenty thousand applications for admission to schools of medicine and about six thousand vacancies. The twenty thousand applications were made

by eight thousand nine hundred individuals; there are multiple applications throughout the country. The impression has been created, particularly in the best known medical schools, that there is a very large excess of applications but evidently not anything like what we thought. Many of the schools report four or five hundred per cent more applications than they can take but this situation is partly due to multiple application. Of the group studied, six thousand five hundred were accepted by the various medical schools and only five thousand four hundred actually appeared. In other words, we found that there were multiple acceptances. We have records of certain students who have applied to as many as nineteen medical schools and been rejected by nineteen medical schools. We have records of other individuals accepted by eight schools and actually appearing, naturally, at but one school.

In addition to this type of general question we have been trying to ascertain what the health needs of a community really are in order that we might get, if you want to call it such, the job specifications for medicine, to try to find out what a doctor ought to know and what he ought to be able to do. In doing that, we have made studies of health needs as distinguished from health demands. These health needs we have studied through results of the draft board, through the various life insurance examinations, life institute examinations, examinations by the public health service, and health surveys, as illustrations.

We have also been studying the demands for medical service. In that instance we have analyzed the daily practice of one thousand physicians and secured one hundred thousand consecutive diagnoses made by the physicians. We have a fairly clear idea of what doctors are being called upon to do. We have these studies both as to general practice and the specialties. In the larger communities we have data on five million clinic visits.

We have also been studying the general trend of medical practice which is toward specialization, toward concentration of physicians in the cities, toward hospital and clinic practice as distinguished from home practice. With it all has been the rapidly increasing elevation in the costs of adequate medical service as a result of which we are now getting numerous proposals for health, medical, and hospital insurance and other methods of meeting the economic features of medical care.

There is quite obviously a trend to place medical education on a

university basis. The day of proprietary medical schools is over and the whole trend is toward the establishment of medical schools on a university basis and toward an emphasis in medicine, as there is in general education, upon the training of the individual student. Mass production in education is gradually being corrected in all fields of learning at the present time. There is in medical training now a much more liberal interpretation of time requirements of courses and an individualizing of instruction through the form of electives and greater freedom for the student. The teaching of many of the specialties is being cut down, particularly the specialties dealing with treatment of one kind and another, and transferred to graduate training. There is a general consensus of opinion that there is an overemphasis in most of our medical teaching on laboratory technique as distinguished from knowledge and a proper philosophy of the basic sciences. Another point is the growing emphasis on preventive medicine, particularly in relation to early diagnosis and treatment.

Since our last meeting in Montreal a few months ago, we have organized three separate committees that are dealing with different phases of these general problems. The first committee is dealing with the problems of pre-medical training. The second committee is concerned with the teaching of the medical sciences. Professor Mendel, of Yale, is the Chairman of that committee. The third committee, of which Dean Edsall, of the Harvard School, is chairman, is dealing with the problem of clinical medicine, including the hospital training. Committee One will probably have more problems touching on questions of general university interest than the others. The gradual elevation of the pre-medical requirements has created the situation that over sixty per cent of the students graduating in medicine now have university degrees. In fifteen of the most widely known medical schools the percentage runs about ninety per cent. There has been a tendency to elevate the age at which medical students graduate and the age at which they begin to practice. The tendency is to lengthen not only the pre-medical training but the post-medical training as well. Most medical graduates have two or more years of hospital work after they graduate and ninety-five per cent take at least one year of hospital or laboratory training after graduation.

W. C. RAPPLEYE

NOTES AND ANNOUNCEMENTS

CARNEGIE CORPORATION.[1]—It is not easy for the officers of an educational foundation to get criticisms and suggestions regarding its program as a whole. Each year they receive visitors by the hundreds—but the mind of each visitor is concentrated upon some particular proposal, and his judgment as to how well the foundation is carrying out its trust is likely to be colored by its reception of the particular projects in which he is interested.

Last spring the President of the Corporation tried the experiment of writing to eighteen men and women whose judgment in educational matters is generally respected, none of whom had at the moment any proposal before the Board. Eight were university presidents; six, presidents of colleges; and the remaining four, educators of wide experience.

The Corporation (he wrote) is going on the assumption that a body like ours does its best work if in general it concentrates its efforts for the time being on a few types of activity. We plan to have at least one fundamental educational study going—for example, those now being completed in modern language and engineering education; also, if we can find it, an important cooperative research such as that now under way on otosclerosis. We are also working toward an effective cooperation with the learned societies, particularly those interested in the humanities.

Last year, however, we closed up temporarily our work in the library field by adopting a ten-year program calling for $500,000 annually. I have felt that to take its place fine arts and adult education are perhaps best adapted for our present concentration of effort, not only because of their timeliness and because no other foundation is supporting them, but for another reason as well. We are today devoting two-thirds of our income to cleaning up past obligations, and two or three of the large gifts of the type we have been in the habit of making in the past would entirely wipe out our available funds for new enterprises. For myself I don't see any activities in which relatively small gifts can be made so useful as in these.

We all know that the fine arts and adult education offer an appropriate opportunity for promoting "the advancement and diffusion of knowledge and understanding among the people of the United States," but are we sure of their place in competition with other opportunities?

The replies were wholly personal in character, but a summary of their general tenor may be of interest. There was uniform agree-

[1] Extracts from Report of the President, 1928

ment as to the wisdom of concentration of effort, although a suggestion made independently by three of the writers merits careful consideration. This suggestion is to the effect that each year a sum, not necessarily very large, should be set aside from which grants for small projects may be made on their merits and without reference to their falling into any particular category, on the ground that while a concentration of effort is obviously desirable a certain amount of dispersion has also its merits.

As to the fine arts and adult education, thirteen wrote in general approval of a concentration in these fields. One favored fine arts but was in doubt as to adult education; one thought well of adult education but was frank to say that in the general stimulation of fine arts in American colleges the Corporation was entering on a dangerous experiment which would result in immature efforts on the part of many institutions. F. P. KEPPEL

THE CHINA INSTITUTE IN AMERICA.—The Institute publishes as Bulletin 4 a list of theses and dissertations presented by Chinese students at thirty-three colleges and universities from 1902 to 1927, inclusive. The total number is five hundred and sixty-eight, the maximum in any year eighty-six (in 1926). Of the total, one hundred and seventy-six are doctor theses. The distribution by institutions shows Columbia far in the lead for doctor theses, with fifty-nine, followed by Harvard with twenty-one, Chicago with eighteen, Cornell with seventeen. Including other degrees Cornell leads with one hundred and sixty-six, followed by Columbia with sixty-seven, Massachusetts Institute of Technology with sixty-two, Chicago with thirty-eight, California with thirty-seven, etc.

NATIONAL RESEARCH COUNCIL.—The report of the permanent secretary of the executive board in December, 1927, discusses a wide range of subjects, including Fellowships in Physics, Chemistry, Mathematics, Biological Science; Special Passports for Scholars Attending International Meetings; the Gifted Student Problem; Promotion of Research in Colleges; National Intelligence Tests; Bibliography of Bibliographies; and Catalogs of Scientific Instruments.

PRIZES FOR STUDENT EDITORIALS.—Pi Delta Epsilon, the honorary collegiate journalism fraternity, will award cash prizes for the best editorials published in college journals during the academic

year 1927–28. A board of judges composed of editors and writers of national repute will read the editorials submitted and make the awards. The purpose of the contest is the stimulation of greater interest in university publications and the elevation of the quality of their editorials. If successful it will be made an annual event with additional prizes later for other journalistic features.

REVIEWS

CONGRESSIONAL DIGEST, OCTOBER, 1927.—This digest is devoted to "The Problems of Copyright Revision." Among the topics discussed or summarized are a review of American copyright legislation, provisions of present copyright law, United States copyright relations with other nations, the International Copyright Union, America and the International Copyright Union, a glossary of copyright terms and phrases, and a pro and con discussion of proposed changes in the present law and question of adherence to the International Copyright Union.

The NATURE OF THE WORLD AND OF MAN, by Sixteen Members of the Faculty of the University of Chicago. University of Chicago Press, 1927.—The most pertinent introduction to a consideration of this book is a brief comment on the activities of our Committee G (Methods of Increasing the Intellectual Interest and Raising the Intellectual Standards of Undergraduates). If the American Association of University Professors had to its credit nothing more than a record of the work of this committee, it would have fully justified its fourteen years of existence as a national body. Under the intelligent and constructive chairmanship of Dr. Wilkins (now President of Oberlin) for several years, it made comprehensive studies of some of the most important problems having to do with the intellectual life of undergraduates. Of these studies, published from time to time as reported in the *Bulletin*, the following are the most significant:

Initiatory Courses for Freshmen.
Sectioning on the Basis of Ability.
Bibliography of Methods of Increasing the Intellectual Interest and Raising the Intellectual Standards of Undergraduates.
The Preceptorial or Tutorial System.
The General Final Examination in the Major Study.
Educational Relations with Alumni.
Sectioning on the Basis of Ability. A Survey of Status in 1924–1925.
Intercollegiate Football.
The Selection, Retention, and Promotion of Undergraduates.[1]

Turning to our volume, we find on its cover the statement that "*The Nature of the World and of Man* has been developed in accordance with, and carries out the recommendations of, the report of Com-

[1] Reprints of most of these reports are still available on application to the Secretary of the Association.

mittee G of the American Association of University Professors." The report referred to is the first listed above and appeared, as many will recall, in 1922, the result of a survey on special initiatory courses for freshmen given in American colleges and universities. From the recommendations and conclusions of the Committee, the following also appears on the cover:

The Committee believes that a general acquaintance with the modern view of the world and man—with the modern view, that is, of "the chemical materials and the physical forces that constitute living and nonliving things," the earth in its astronomical relations, the evolution of plants and animals, and the physical, intellectual, and social evolution of man—alone affords the perspective which is indispensable for the proper organization of an acquired knowledge and for the full development of the desire to receive and to contribute advancement to knowledge. Such a perspective constitutes the ideal point of departure for the entire intellectual enterprise of the undergraduate. We therefore recommend that a course on the nature of the world and of man be given in the Freshman year.

We recommend that these courses be eventually required of all Freshmen; but we recognize the probability that in some institutions it might be best to give them first upon an experimental scale, either as optional or to a selected group of Freshmen.

We recommend for this course a common text or syllabus to be used by all students. We regard such community of textual information as essential for profitable discussion and quizzing.

This book is written by sixteen members of the faculty of the University of Chicago under the editorship of Professor Newman, who contributes two chapters. The specific purpose and point of view of the book, and the method of its preparation may best be presented from the Preface of the Authors:

The purpose of this book is to present an outline of our knowledge of the physical and the biological world, and to show the position of man in the universe in which he lives.

Not only the aims of this volume, but also the plan on which it has been written, have been determined in large part by the fact that it contains the subject matter of a "survey course" given each year by its authors at the University of Chicago to a group of selected first-year students of superior intelligence.

The course as given at the University of Chicago was initiated by Dean Ernest H. Wilkins, and it was organized by H. H. Newman, who has acted as director. Formal lectures have been given by sixteen instructors, each a specialist in his field. Detailed class exercises and written reports have been directed by H. H. Newman, J. Harlen Bretz, and Merle C. Coulter.

Generally the authors have been compelled to limit themselves to explaining final conclusions, but occasionally, when it has seemed feasible, they have given brief accounts of the means by which these conclusions have been reached.

During a period of four months the authors have spent one evening a week in conference on their completed manuscripts. Each author has read his chapter before his associates for their suggestions and criticisms, which have been numerous and valuable. Moreover, each chapter has been critically examined by at least one person beside its author and the editor. Although there has been an unusual amount of close co-operation in the preparation of this book, each author is responsible only for the chapter he has written.

The book is directly due to the inspiration from students, eager to learn, able to discern evidence, and prepared to face facts without fear.

In this same connection, it is pertinent and significant to turn, also, to an article on "The Undergraduates at Chicago" by Dean Boucher in the December, 1927, issue of *The University of Chicago Magazine*. After discussing the new approach at the University to the problem of the freshman curriculum and calling attention among other changes to the new orientation courses in Political Economy and History, he writes concerning the course of immediate interest to us:

With the hearty cooperation of the English Department an interesting experiment is being tried this quarter with a selected group of freshmen. The one hundred forty freshmen who are selected for admission by invitation to the first Survey Course, "The Nature of the World and of Man"—the top of the entering class in ability—were not registered for Freshman English in the Autumn Quarter. Two instructors in English are assigned to this group and on the basis of the regular written work for the Survey Course are classifying these freshmen into three groups: those who clearly do not need the introductory course in English and who will be exempted; those few who clearly do need it and will be enrolled for it in a subsequent quarter; and those who, with the aid of a short period of individual conferences and coaching, can be certified as not needing the regular course.

One gains a quick and comprehensive view of the scope of the book through the titles of the chapters:

I. Astronomy.
II. The Origin and Early Stages of the Earth.
III. Geological Processes and the Earth's History.
IV. Energy: Radiation and Atomic Structure.
V. The Nature of Chemical Processes.

VI. The Nature and Origin of Life.
VII. The Bacteria.
VIII. Evolution of the Plant Kingdom.
IX. Interactions between Plants and Their Environment.
X. The Evolution of the Invertebrates.
XI. The Evolution of the Vertebrates.
XII. The Coming of Man.
XIII. The Factors of Organic Evolution.
XIV. Human Inheritance.
XV. Man from the Point of View of His Development and Structure.
XVI. The Dynamics of Living Processes.
XVII. Mind in Evolution.

Each chapter is accompanied by a list of selected references from which additional readings are to be assigned. A nine-page glossary of scientific terms comes at the close, preceding the index. The basis of selection or rejection of terms is not always clear to the reviewer. For instance, one finds *auditory* and *retina* with the usual definitions, but not *symbiosis* or *symbiotic*, all of which appear in the book. The plan of the authors is based on the idea of frequent revisions to keep the book abreast of the best educational practice.

Those who desire a critical evaluation of the theories and of the employment of the facts presented in this book must turn to reviewers who lay claim to the term "scientist." The distinguished scholars, whose names appear in connection with the different chapters, are a sufficient guarantee of the unique and high quality of the text as an *Outline* of a field of knowledge. The present reviewer is a student of the modern humanities. He confines himself to some observations on what appeal to him as the most distinctive features of the book. Probably the most reiterated ideas are those having to do with law and order in the universe and with the mechanistic conception of life. In the words of one of the authors, "the orderliness of the universe is the supreme discovery of science." And chapter XVI, which really concludes the discussion of the distinctly physical processes and the physical universe, closes with a summary of the other idea:

If the few typical facts, processes, and causal relations here discussed have been clearly and adequately outlined, the reader will perceive that the mechanistic conception of life is a working hypothesis supported by an ever-increasing body of facts, and not an opposition theory put forth in the spirit of controversy. The reader will have gathered some conception of the immensity of the un-

known before us, and a decent respect for the achievements behind us. He may even have caught a breath of the very spirit of science, its perpetual and painstaking experimentation, its insistence on proofs, its challenge of "authority," its reverence for truth.

Again, there are constantly recurring attempts to make the student realize the epic and dramatic quality of the forces playing in the vast range of materials reaching from macrocosm to microcosm, from planetary systems and stellar galaxies to electrons and amoeba:

"Arma virumque cano" (I sing of arms and of a man)—thus Vergil began his great epic poem upon the adventures of Æneas of Troy.

The Nature of the World and of Man is a greater theme by far than that of the Roman poet. On its physical side, it is not limited to a circumscribed area on the shores of the Mediterranean, but it ranges from electrons up through atoms to molecules and to worlds and to suns and to galaxies of suns. In time, it covers not simply the brief span of a part of human life, but it reaches back to the origin of worlds and traces the outline of their development down through the geologic ages to the present, and it looks forward to a distant future when they will come to an end. It is not concerned merely with a few adventurers from the shores of Troy, but it includes myriads of types of plants and of animals from the lowliest bacteria and protozoa up to man. It does not recount the great deeds of only one hero and his companions, but it is the story of the efforts of the human race to conquer the physical world, to learn how to live happily with itself, and to direct its own improvement.

And turn to the close of the chapter on Bacteria:

The famous words of Tyndall are worth repeating: "We have been scourged by invisible thongs, attacked from impenetrable ambuscades, and it is only today that the light of science is being let in upon the murderous dominion of our foes."

The authors are conscious of the dangers of superficiality resulting from the necessary presentation of such a large and comprehensive body of conclusions without accompanying evidence or data. They frequently refer to this necessity when they present widely accepted theories or conclusions. The effect of all of this upon the mind of the superior freshman, for whom the book is intended, depends, one may hazard, to a large degree upon the instructor or group of instructors who happen to be presenting the material rather than upon the book itself. The real test of this experiment, of course, is the answer to the query as to how generally and how successfully the book can be used. In the small college, where one instructor—or a few

at most—must offer the course, certain difficulties are obvious. And the more generally the course is adopted in such colleges, the more pronounced the unsatisfactory results are likely to be. On the other hand, in the average large university the chances of securing among the departments anything like the coordination observed in the group at the University of Chicago are very small. Without such coordination the student is in danger of leaving the course with more chaos than order, with confusion worse confounded. But the book is one which every member of this Association should welcome with enthusiasm. Fresh from an enjoyable and profitable reading of it, the reviewer hopes that despite the difficulties presented, this experiment in a new survey course will be widely tried; and he especially recommends the volume to all non-scientists.

COLLEGE AND UNIVERSITY LIBRARY PROBLEMS, by George Allan Works. Introduction by Samuel Paul Capen. American Library Association, Chicago, 1927.—Probably no single feature of American undergraduate and graduate schools has developed in importance during the past twenty-five years more than the college and university library. This feature is the subject of investigation and study by a committee of which the chairman was Mr. George Allan Works, recently appointed Dean of the Graduate Library School of the University of Chicago. Dr. Samuel P. Capen, representing the Carnegie Corporation, which financed the study, reviews briefly in a foreword the history and plan of the study from its inception to its completion. In general, the recommendations of a group of representative librarians, made in 1924, to the Educational Research Committee of the Commonwealth Fund were followed. On this basis the study is limited "to the consideration of such phases of the library problem as are of primary interest to administrators and officers of instruction in colleges and universities," and to eighteen representative colleges and universities geographically distributed. Of the seven chapters included in this study, those of most interest to members of the Association are:

Chapter 3. Cooperation in the Development of Library Resources for Research

Chapter 4. College, School and Departmental Libraries

Chapter 6. Problems of Minor Importance.

In chapter three, special items of significance are the testimony from the University of Washington as to the difficulty—almost im-

possibility—of securing now from European booksellers sets of research periodicals; and the suggestions from Dean Ford of the University of Minnesota for allocating by common agreement the buying of books in definite fields of departmental research and for a system of interlibrary loans. In chapter four, the arguments for and against departmental libraries are presented, with the conclusion that "there appears to be a well-defined movement under way that is designed to make for a centralization of library service in universities." Here, there recurs to the reviewer his experience some years ago of traveling uncounted miles visiting five different libraries on one campus in connection with work on his doctoral dissertation. Chapter six includes only twelve pages. Despite its brevity and its unprepossessing title, parts of it are probably of the most general interest to teachers. Especially is this true of the account of the experiment at the University of Iowa, where lectures in certain of the humanities are reduced and where the library becomes actually a laboratory center for all students in these subjects. "The results have been so satisfactory that in the plans being drawn for a new library building provision is being made for a sufficient number of study rooms and desks to meet the needs of all students. The students in the humanities would then have the library as their place for laboratory work."

THE EDUCATIONAL RECORD, January, 1928.—The two articles of most general interest to members of this Association in the January issue of *The Educational Record*, the magazine of the American Council on Education, are "The College and the Graduate School" by President A. Lawrence Lowell, and "Predicting College Success for the High School Senior" by Professor J. B. Johnston. In the former of these, President Lowell, after mentioning his often-repeated conviction that the American system of education loses much through too leisurely methods in early youth and advocating our taking steps "to abandon the methods of secondary education as early in college years as possible," concludes with reference to graduate work:

> That the master's degree should not be a prerequisite to the doctor's degree for those men who are prepared for the kind of work on which it is conferred. They should not be encouraged, they should not even be permitted, to take it after they have been accepted as candidates for the doctorate, because they should not be diverted from their appropriate work by other objects of a different character. The second thing that seems to be clear is that the adoption of

university methods by colleges must involve a distinct remodeling of some kind in the graduate school.

In the latter article, Professor Johnston reviews a cooperative experiment between the University of Minnesota and some surrounding high schools on predicting the failure or success of high school seniors as college students. The method of prediction was based on high school ratings and on psychological tests given before the pupils graduated from high school. As an example of the results, out of 1088 students tested "it was predicted that 208 would fall below the average of C. Of these 208 only three did receive the C standing" in college. In view of the discouragement to the earnest but maladjusted freshman resulting from his failure, and of the great social, economic, and academic waste attendant on our generally prevailing system of selection, this experiment, with its high percentage of accuracy in prediction is most significant.

THE ROAD TO XANADU, A STUDY IN THE WAYS OF THE IMAGINATION, by John Livingston Lowes. Houghton, Mifflin Company, 1927.—A history of the genesis and development of the *Rime of the Ancient Mariner* is based upon a note book in which Coleridge jotted down reflections concerning and excerpts or suggestions from his wide and voluminous readings. This is a book which all interested in the reflective and creative processes of the human mind may read with pleasure and profit.

BOOKS RECEIVED FOR REVIEW.—*The Changing College*, by E. H. Wilkins. University of Chicago Press, 1927. *Research Adventures in University Teaching, Eighteen Investigations Concerning College and University Problems*, Public School Publishing Company, Bloomington, Ill., 1927.

The editors of the *Bulletin* invite members of the Association to send in titles of books or monographs they care to suggest for review or notice, or to submit brief reviews for publication in this section.

MODERN FOREIGN LANGUAGE STUDY[1]

The Committee on Investigation has concluded its program of fact-finding and is now preparing the results for publication... The reports and projects of the Study, including those in which it cooperates with the Canadian Committee, fall into three groups:

1. *Those already published or in press.*—This includes the library of tests, with their accompanying manuals, etc., B. D. Wood's *New York Experiments with New Type Modern Language Tests;* G. T. Buswell's *A Laboratory Study of the Reading of Modern Foreign Languages;* Buchanan's *Graded Spanish Word Book;* the Morgan-Henson-Purin *German Word Book;* O'Shea's report on *Reading of the Modern Languages after Graduation;* and the statistical report,[1] which is in press.

2. *Those in manuscript awaiting final revision.*—This includes the report on achievement tests, prepared by Professor Henmon, with a chapter on tests in Quebec by Professor Ford of the Canadian Committee; the report on training of teachers by Professor Purin; a summary report on objectives, organization, curriculum, and methods by Professor Coleman; and a number of briefer papers on particular studies and experiments in the various fields of inquiry.

3. *Those for which the material has been gathered but not yet completely collated.*—This includes the French word book; studies in idiom frequency in French, German, and Spanish; a study of the frequency of syntactical phenomena of the German verb, a study of errors in German composition, prognosis tests, and experiments, etc. It is probable that the series of reports and monographs appearing as "Publications of the American and Canadian Committees on Modern Languages," will, when concluded, embrace twelve volumes. The studies in French and Spanish syntax frequencies are extensive undertakings which have made appreciable progress. It is probable, however, that they cannot be concluded with the time and means at our disposal...

The Executive Committee therefore offered to the Committee on Direction and Control the following resolutions:

1. That the Committee on Direction and Control authorize the Executive Committee to complete the publication of the reports and special studies and liquidate the affairs of the Study as early as possible.

Report of the Chairman, Committee on Direction and Control, September 1927

2. That as soon as the publication program shall have been completed, or practically completed, in no case later than April 1, 1928, the present Committee on Investigation be dissolved, its dissolution to take effect on the appointment of the Committee on Modern Language Teaching mentioned below.

3. That the American Council on Education be asked to appoint a Committee on Modern Language Teaching consisting of seven members, two of whom shall be from Canada, all to hold office at the pleasure of the Council.

4. That the Committee on Modern Language Teaching be authorized to raise funds and administer these, as well as all royalties accruing from the sale of American Council Modern Language Tests published by the Modern Foreign Language Study and the Canadian Committee on Modern Languages and other royalties for the following purposes:

(*a*) To revise the American Council tests and develop alternative forms.

(*b*) To generate and standardize new tests for other language abilities.

(*c*) To initiate experiments in teaching and learning the modern languages.

(*d*) To gather information of importance for modern language teaching.

(*e*) To disseminate information and materials tending to the improvement of modern language teaching.

(*f*) To take such other steps as may seem desirable to create a higher degree of professional spirit and accomplishment among modern language teachers.

(*g*) To publish the results of its activities.

(*h*) To establish when it may seem desirable a center for maintaining contact with the teachers of the modern languages and for the furtherance of this program.

ROBERT HERNDON FIFE, Columbia University

FOREIGN LANGUAGE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY[1]

In most of the universities of the United States a reading knowledge of French and German is usually required of every candidate for the degree of Doctor of Philosophy. As both the efficacy and the sincerity of this requirement have been questioned of late, it has seemed advisable to examine the procedure in this regard as it is found in some of our universities.

The data that are given below were furnished in October, 1927, by the deans or the secretaries of the graduate schools of the several universities, except that the data with respect to Cornell were taken from printed bulletins.

The following universities require both French and German of all candidates for the degree of Doctor of Philosophy, and will not accept a substitute for either language: Bryn Mawr, California, Colorado, Cornell, Harvard, Illinois, Missouri, North Carolina, Texas, Wisconsin.

The following universities require French and German as a rule, but will permit other languages to be substituted for one or both: Chicago ("On recommendation of a department, approved by the Dean, any other Germanic language may be substituted for German and any other Romance language for French. This, however, is done under exceptional circumstances, as when the literature in the field of a candidate's dissertation is chiefly in some language other than French or German"); Columbia ("with following exceptions: American History—two modern foreign languages; European History—Russian may be substituted for one foreign language; Mathematics—two of three languages, French, German, and Italian; Sociology—two foreign languages;" in the Faculty of Education of Columbia University the following rule has been adopted: "He must further show after the field of his dissertation has been approved that he is able to use the scientific instruments necessary for research in education. For practical field research these instruments are usually the methods of statistical inquiry; for documentary study, they are usually the modern languages, preferably French and German; for certain studies other instruments of research may, upon proper approval, be accepted"); Iowa ("On petition to the Graduate Council another language may possibly be substituted for one of

[1] Supplement to the report published in the *Bulletin* for March, 1927

these"—French and German—"provided it is serviceable for research"); Kansas ("All candidates must have a reading knowledge of both French and German unless they can show that their present and future research will not necessitate a reading knowledge of one or the other language. In that case a foreign language which will be more necessary may be substituted"); Michigan (Another modern foreign language may be substituted for French or German, but this is done "rarely"); Minnesota ("The substitution of other foreign languages of greater service in the major field may be permitted by the executive committee on the recommendation of the group committee"); Nebraska ("On vote of the Graduate Council, another language, as for instance Spanish, may be substituted, if the student's investigation has to be made through the medium of that language"); Oregon ("If the major department judges that some other language, say Spanish for a student in Latin-American history, is likely to be more useful to him than one of the two usual languages, the graduate Council may give him the privilege of making the substitution"); Pennsylvania ("On recommendation of the Department Committee in charge of the major subject, another modern foreign language may be substituted for either French or German"); Princeton ("In special cases and for good reasons presented, a substitution of one other modern foreign language may be made for either French or German, but not for both"); Stanford ("In special cases, with the approval of the school or department and the Committee on Graduate Study, another foreign language may be substituted for French or German, when such substitution is justified by the literature of the candidate's field of study.". . ."The mere mastery by the candidate of some other language is not regarded as a valid reason for waiving the requirement of French and German"); Virginia ("Another modern foreign language may be substituted for French or German upon the recommendation of the candidate's major professor and upon the formal vote of the Committee on Graduate Studies"); Yale ("On petition in special cases Spanish has occasionally been allowed as a substitute for French").

The following universities require two modern foreign languages, but do not specify which ones they shall be: Johns Hopkins ("The particular languages required are to be specified by the department in which the student is specializing"); Ohio ("Each department may select its own languages").

Indiana University is exceptional in that "a candidate may be

excused from the language requirement by the consent of the candidate's committee."

Summary.—Of the twenty-six universities that reported:

Ten (Bryn Mawr, California, Colorado, Cornell, Harvard, Illinois, Missouri, North Carolina, Texas, Wisconsin) require French and German of all candidates for the Ph.D. degree without exception.

Thirteen (Chicago, Columbia, Iowa, Kansas, Michigan, Minnesota, Nebraska, Oregon, Pennsylvania, Princeton, Stanford, Virginia, Yale) usually require French and German, but will permit substitutions.

Two (Johns Hopkins, Ohio) require two modern foreign languages, but leave the choice of the languages to the several departments.

One (Indiana) may release the candidate from all language requirements.

It is difficult to determine what the best foreign language requirements for the Ph.D. degree are in all cases.[1] Critics of the present rules call attention to the fact that to require a reading knowledge of French and German of candidates for the Ph.D. degree in French or in German really means the requirement of only one foreign language outside of the principal field of study. The two languages that should be required of a candidate for the Ph.D. degree in French are Latin and German. The candidate cannot work without them, and it can be assumed that he knows French before he is admitted to candidacy for the degree. The two languages that should be required of a candidate for the Ph.D. degree in German are Latin and French. It can be assumed that he knows German.

The opinion is generally held that a satisfactory reading knowledge of at least two foreign languages should be required of all candidates for the Ph.D. degree. With this opinion I am in full accord; but I am not convinced that the requirement of a satisfactory reading knowledge of two foreign languages is strictly and sincerely enforced at the present time in all the departments of our universities.

Opinion is divided as to the advisability of having the same foreign language requirements for all candidates for the degree

[1] Professor F. F. Swertfeger of the University of Virginia has gathered data on the use of foreign languages by candidates for the Doctor's Degree. The following expressions of opinion are of interest:

QUESTION: In your opinion, was a knowledge of either or both of the languages (French, German) of such importance that your research work either for your dissertation or since would have suffered appreciably if you had not been able to use the languages?

ANSWERS: Yes, 236; No., 102.

QUESTION: Should the substitution of another language for French or German be permitted?

ANSWERS: Yes, 112; No, 37.

The languages suggested for substitution, in order of frequency, are Italian, Spanish, Russian, Scandinavian, Dutch, Arabic, Hebrew, Chinese.

without regard to the work they are doing. I do not attempt to offer a solution for this problem, but I would suggest that the professor or the committee in charge of a candidate's work should select the foreign languages that will be of the greatest service to the candidate, and that this choice be subject to approval by the Dean of the Graduate School or by the Graduate Council. And in every case the several foreign language departments should determine whether the candidate has or has not a satisfactory reading knowledge.

E. C. Hills, University of California

EDUCATIONAL DISCUSSION

DEMOCRACY AND SCHOLARSHIP.[1]—My own lack of authority to deal with such questions and the fact that I am speaking to an assembly of students and teachers have turned my attenton rather to a third aspect of democracy—its alleged hostility to every form of intellectual superiority, its tendency to level down, its confusion of the ideal of equality of opportunity with equalization of achievement, its jealousy of every form of preeminence excepting those which flatter it by the direct appeal to the popular heart, its acquiescence in cheap success, obvious art, superficial education, its readiness to decline upon the lower plane and accept the facile standard, its apotheosis of mediocrity and its cult of incompetence, its susceptibility to the appeal of such rhetoric as "I fear the plutocracy of wealth, I respect the aristocracy of learning, but I thank God for the democracy of the heart."

There were shrewd English rustics who could not read but were good judges of men, and the Athenian democrat who read little exercised his mind more effectively by discussion and hearing both sides canvassed in the assembly than the casual reader of newspaper paragraphs does today.

But the real question is not whether illiteracy disqualifies, but to what extent literacy qualifies.

Reading at least presents an opportunity and the youth who knows how to profit by it may become a leader to others. Yet again it is doubtful whether actual history shows the political judgment of the so-called upper educated classes to have been sounder than that of the masses. Even college and university teachers are not necessarily wise politically and socially.

On the chief and most obvious theme of democratic mediocrity there is nothing new to be said, and I mention it again only as the necessary presupposition of all that is to follow.

For our purpose democracy or "the masses" includes the great majority of our leaders, the so-called educated, the graduates of the ordinary high school and college. The quiet revolution that is fast abolishing all intermediate economic gradations between unskilled labor and the millionaire has its parallel in the standardization of thought and taste that is fast reducing the middle class majority of Americans to one cultural level. It is a common indictment of

[1] Address delivered before the Convocation of the University of the State of New York, October 21, 1927

American education that the average college graduate of ten years' standing cannot be distinguished from the non-collegiate traveling man in the smoking car by his grammar, his vocabulary, or the range of his information. Such is the irresistible pressure of democratic standardization by the grade and junior high schools, the various more or less yellow or tabloid newspapers, the two million circulation weeklies, the best sellers, the radio, and the movies. Everybody is comfortably informed and reasonably intelligent, and the writers and entertainers who give this public what it wants are often extremely clever and the supply of experts in science and engineering will not be allowed to fail. But the delicacies, the refinements, the precisions of taste, criticism, and scholarship are so discouraged by the prevailing apotheosis of mediocrity that only those who have a footing outside of time and fashion, only a conscious and concerted effort of a determined minority, only a rally of the remnant will keep them alive. . .

And so the education of our children, the quality of our amusements, and the reading that gradually colors and determines our thought, and informs and entertains our leisure, is constantly sinking to the level of the standardized canned provision furnished by shrewd wholesalers to the democratic masses. But I have no wish to harp on this string, which has been repeatedly sounded by many American critics in the past twenty years. . .

Nobody knows enough to pronounce that the young of this generation are better or worse than their predecessors, or to single out the chief cause of the changes he may think he observes. If we conceded every point made by the conservative alarmist in denunciation of the breeding, the teaching, the morals, the esthetics, the reading of the younger generation, they might all be counterbalanced by the general improvement in diet and hygiene which our science and our wealth have made possible. And, similarly, if we affirm with the optimist that the young people of our schools are a fine upstanding lot, the credit would belong not to them, and still less to the newer fashions in morals and ideas and education, but to this better hygiene of childhood and the parents who gave their lives to provide it. In short, as Mill said long ago, and Bryce more recently, and as I argued at length in my "Assault on Humanism," the social sciences, including education, are not experimental sciences. . .

Apart from the general tendency of democracy to lower standards already considered, the chief weakness of democracy, and especially

democracy under modern conditions of communication and publicity and universal half-education, is the susceptibility of the masses of mankind to mere rhetoric, their helplessness before sophistry and pseudo-science, their lack of all resistance and immunizing self-protection against fashion and propaganda. . .

But if we take rhetoric in its truer and broader sense as a misuse of any kind of fallacy, irrelevance, ornament, emotion, suggestion, wit, epigram, to gain some undue advantage over sober reason and fact, then there never has been a time in the history of mankind when the power of rhetoric was so great. I attribute this to modern facilities in communication, the railway, the steamship, the telegraph, the radio, the muddlement of our ideas by an unsettling and superficial education whose staple is often pseudo-science, and, lastly, to that of which I mainly wish to speak, the lack of any immunizing defense against these things in our education. The majority of college graduates today have not even had a serious course in elementary logic and graduate students of Aristotle are blocked by not even knowing what a syllogism is. But, whatever the cause, the fact is apparent. If time allowed, it would be easy to show that nearly all the most successful writers of our time are not sober thinkers, but fluent or smart rhetoricians, in the sense of our broader definition. They feel no responsibility for what they say, provided they can say it in a way to attract attention or support a propaganda. . .

The limits of my time preclude further development of these points, which I must ask you to note and take for granted while we hasten on to the practical conclusion. It is simply this, that American college education ought to substitute for much of the present muddlement of the pseudo-sciences, sociological, psychological, pedagogical or what-not, that now dissipate the student's attention and confuse his thinking, a more critical and intensive study of the logic of debate and discussion, or rhetoric in the broader meaning I have given the word, the rhetoric which is the chief reliance of all faddists, pseudo-scientists and propagandists for the tyrannical imposition of their ideas by the hypnotizing of democracy with words. . .

If democracy threatens to become an aristocracy of orators, then democracy above all other forms of government ought to teach its citizens not how to orate but how not to be taken in by oratory. But the Greek sophists who first taught rhetoric and debate naturally took the other point of view. They professed to teach the art of success in life. They taught the clever, the smart disciples how to

put it over in a courtroom or political assembly by the appearance of argument, by tricks of style, or by affecting appeals to the feelings. It was the last of their concerns to teach the audience how to analyze the trick and resist the affection or the infection. For this reason Plato, the world's greatest prose artist, always speaks with contempt of rhetoric, and Aristotle, author of the first and still, on the whole, the best treatise on rhetoric, quietly observes that though strictly speaking nothing but fair argument is relevant, rhetorical ornament and emotional appeal have great power, owing to the sorry character of the audiences. . .For the uneducated, so far as they listen to words at all, will always be at the mercy of words. Russia is the typical and tragical example. The prelude to her present hell was a Thyestean banquet of claptrap and fine language. . .

What I blame is educated Russia, the novelists, the essayists, the universities, the students, who, instead of learning their lessons, had been sowing this kind of wind for fifty years, and now reaped the whirlwind. We, of course, in America are in no present danger of a Russian collapse. All Americans talk pink, but they don't vote red. They vote for Coolidge. But fundamentally, our attitude toward rhetoric and all the arts of persuasion is that of the Greek sophists and of Russia. . .

The main endeavor of university teaching in this kind should not be to teach the clever student how to exploit these influences, but rather to arm the average student to resist them.

The principle applies to all forms of propaganda and advertisement and to their chief instrument, rhetoric, in all its manifold disguises. The dominant aim in all university teaching of these subjects should be the establishment of a resisting immunity. It is no legitimate function of public education to teach smart men how to overreach and overpersuade their fellows. Its proper task is to enlighten and harden the minds of those who make up the staple of audiences against such attempts. . .The teaching I postulate is entirely possible, but this is not the time or place for a technical discussion of its methods and procedures. And in any case it could only supplement and never take the place of that broader, critical and historical study of humane letters which is the only complete discipline of the reason, and which after or in cooperation with science ought to form the staple of every wisely organized curriculum.

PAUL SHOREY, University of Chicago

COLLEGES AND BUSINESS.[1]—It behooves us, from time to time, to give a few moments of consideration to what is the essential "goodness" of an institution of higher learning. That is the subject which I wish to discuss today.

I am going to start with the premise that educational institutions should be principally concerned to be educational. If this is to be so, then the nature of goodness in a college is the extent to which it understands what education really is, and can make its influence pervasive among men enrolled in the college, that they should become interested in education, understanding of it, and eager for it. . .

The old Greek philosopher, Epictetus, summarized this essentially when he said, "Your rules say to you that the free men shall be educated; I say to you, rather, that the educated men shall be free."

What inference are we to draw, then, in regard to the jumpy nervousness of the people of this great republic of ours at the present time, which makes them want censorship, repression, and prohibition to an extent which would have seemed impossible a very few years ago? Here in the enlightened city of Boston there is a list of proscribed books, the influence of which is presumed to be harmful to the public mind. In the great city of Chicago we have the burlesque performance at the present time of a city government attempting to say what history ought to state, rather than indicating what history really is. In Tennessee we have had the ridiculous Scopes trial, with the attempt therein to define what science should be allowed to discover rather than to accept what science really has discovered. . .

Education, to be sure, is recognized as being responsible for transmitting what is conceived to be the best thinking of one generation to the next.

It is to be considered, however, that in thought as in other things, the differentiation between that which is best and that which is average is very great. The spirit of the educational institution and the popular will are in agreement, in so far as desirability is concerned of perpetuating the best thoughts of the time. The discrepancy arises when the popular will tries, likewise, to perpetuate the average thought of the time, with its inertia, its inherited prejudices, and its acquired apprehensions.

Herein can be found the greatest handicap to intellectual progress

[1] Address at the University Club, Boston, January 7

and to spiritual freedom. Herein lies the influence which most works against a college remaining an influence for mental development.

There is no proposition on which the college which desires to be an educational institution can speculate more profitably than on just how far we have got away from the ignorance which makes for fear, and how sincere is our desire for the knowledge which will make men free. . .

This is the dilemma of the college which genuinely desires to be an educational institution—that it must deal speculatively with the affairs of the future, while the average mind of contemporary civilization is insistent that it shall deal simply with the past. Always the man or the individual who strives to build for the future is subject to the condemnation of those who think in terms of the average thought of the time. . .

Always mankind at large prefers to bear the ills we have, and it thus comes about that widespread apprehension and popular condemnation attach to the efforts of the individual who desires to make creative thought a goal or to the desire of the institution which wishes to stimulate men to think. . .

I wish to file my complete dissent to the proposition that the value of the American college is to be fairly judged on the basis of whether it enhances the prosperity of the country or not. I wish to dispute categorically the theory that it is the function of the college to make business successful. I am not convinced that the college has anything to do with the current aspirations that prosperity shall become our sole objective as a people. These are all desirable conditions for mankind, but they are not primarily the concern of the college. The concern of the college is, first, more and better thinking; that mental processes shall be disinterested, that they shall be true, and that they shall contribute to the ennoblement of man's soul as well as to the indulgence of his body. It is no rare thing in life to see comfort destroy power. . .

One of the greatest problems which the American college faces in the present day is to preserve its function as an educational institution to an extent that shall give its men the proper outlook on life and shall steel their wills and harden their minds against the tendencies toward materialism, which are bred in a period of so great economic surplus as is the present period in America. . .

All education is self-acquired, and some men have the stamina

and the will to acquire this without the aid of any formal help. Too much credit cannot be assigned to these.

The college's function is to develop intellectuality and the question is not whether this intellectuality is applicable to the economic order or to the counting-house. The real question is whether men are becoming more intelligent or not. It may be inquired further whether it is intelligent for a man to give all of his attention to the accumulating of material wealth. . .

The industrial life of America, manufacturing efficiency, mass production, and the economic surplus which these create, rest not on the platitudes of materialists but on the quiet, painstaking research of scholars, eager to extend the frontiers of knowledge and accepting as sufficient reward the self-consciousness of having discovered new truth.

Finally, there is one other point which I should like to submit for your consideration in this discussion of whether the college shall be an educational institution or not.

There is no function of education more important than the giving of a sense of proportion to men undergoing the educational process. Somewhere Mr. Dooley is represented as talking with Mr. Hennessey, who inquires from him whether it is true that the colleges direct public opinion. Dooley takes this under consideration and then quietly asks whether it is true that waterwheels make the rivers run. There is a deep, fundamental philosophy to which we need to give consideration in this answer. The colleges have to struggle against the lack of popular understanding and appreciation of the objectives which they seek. . .

Let us take the case of a college professor whose name France places above that of Napoleon, Louis Pasteur. His studies of the diseases of the silkworm saved the silk industry from extinction in France.

His proof of the validity of the germ theory of disease revolutionized surgery and obstetrics. His discovery of the causes of puerperal fever reduced the fatalities among women at childbirth to a fraction of what they were before. He saved the flocks and herds of France from extinction by the ravages of anthrax. He devised an antidote which eliminated the danger of death from attacks by rabid animals. Meanwhile, uninterested in wealth, he lived upon a modest salary, seeking and realizing little from his discoveries. He amassed no wealth and it may be doubted if his total income throughout his

life was as much as was paid to "Red" Grange for his first dozen games of professional football. . .

For centuries the isthmus of Panama was regarded as the white man's grave. Successively, Spaniards, French, and English gave up their attempts to found colonies there. Of the force with which de Lesseps undertook to dig the Panama Canal eighteen in every hundred men died and a dozen others became helpless invalids.

In 1900, Dr. Lazear, a member of the Walter Reed Commission, permitted himself as a servant of science to be bitten by a mosquito which had just previously bitten a man suffering from yellow fever, with the result that he contracted the disease and died in a few days. However, he had made his contribution to knowledge. This he did on his salary as an army surgeon. It is a detail that this experimental search for new knowledge made possible the later building of the Panama Canal.

It is from considerations such as these that I ask the question of you men, whether you wish your colleges to be educational institutions or social finishing-schools for the polishing of personality; or do you wish your colleges to be educational institutions or training schools for business; or again, do you wish your colleges to be educational institutions or the homes of champion football teams. . .

It is the responsibility of education to scan the far horizon; it is the obligation of education, if need be, to undergo attack, to accept contempt, and to endure derision from contemporaries who are more interested in maintaining their own opinions than they are in knowing what is really so. It is the function of education, when error is found, to denounce it; it is the privilege of education, when truth is found, to proclaim it.

These are matters germane for your consideration. Do you wish our colleges to be educational institutions?

ERNEST M. HOPKINS, Dartmouth College

COLLEGE LIBRARIES AND CHEMICAL EDUCATION.—The answer to the question of what books a library in chemistry should contain will be found excellently answered in a book, containing a list of 1600 books, each one judged by experts as to importance and value. This book, edited by Patterson and Crane, will soon be available. The problem of the purchase of new books as they appear is one which must be answered anew for each volume and can hardly be discussed in a paper of this kind. Fortunately, perhaps, the question

of books is a minor part of the principal problem, and is almost totally eclipsed by the bigger question: What files of scientific periodicals are needed in a college library successfully to prepare the student for advanced work, taking into consideration also those materials necessary for the stimulation and intellectual development of the faculty? This latter need is quite as important as the first because of the increasing demand of the colleges for instructors with the doctorate degree. Such men are reluctant to accept positions in colleges where facilities for continuing the research which they have learned to love are lacking. . . In casting around for a better method of arriving at the answer, the writers decided to seek an arbitrary standard of some kind by which to measure the desirability of purchasing a particular journal. . . It was decided to tabulate the references in a single volume of *The Journal of the American Chemical Society*. This journal was chosen as the most representative of American chemistry. It is believed that the results of such a tabulation can be considered statistically and used with certain reservations to predict the future needs for a period, let us say, of ten years. The most recent complete volume (1926) of this journal has been chosen and the results tabulated in such a way that the relative importance of any single periodical for any five-year period can be seen. This is very important when one considers that only relatively few libraries can afford complete files of journals which have been published continuously for a century or more. . .

An interesting and important corollary of this tabulation is discovered when one considers the language of publication of the references tabulated. Considering only the foreign periodicals (*i. e.*, excluding those published in the United States) the results are:

Language	Number of references	Per cent
German	1667	52.5
English	1119	35.2
French	300	9.4
All others	87	2.8

Certainly it should be insisted that a reading knowledge of German be required of every student majoring in chemistry in college. French can hardly be accepted as a substitute although it should, of course, be urged as a complementary tool of value.

P. L. K. GROSS, Pomona College,
Science, vol. LXVI, no. 1713

ORIGIN AND DISTRIBUTION OF SCIENTIFIC MEN.—Dr. J. McKeen Cattell has prepared statistics based on the fourth edition of the biographical directory of American Men of Science. To the thousand names first selected in 1903 and reselected in 1909 there were added in the third and fourth editions six hundred and one new names. In the production of these, New York leads with sixty-seven, followed by Ohio with forty-eight, Massachusetts with forty-eight, etc. Of the leading thousand scientific men selected in 1903, Massachusetts produced one hundred and four and Connecticut forty. At the time of their birth, Boston was the intellectual center of the country. Reduced to comparable figures, the birthrate of leading scientific men per million of population had fallen in Massachusetts from one hundred and nine in 1903 to eighty-five in 1910; in Connecticut, from eighty-seven to fifty-seven. On the other hand, in Michigan it had increased from thirty-seven to seventy-four; in Minnesota from twenty-three to fifty-nine; in Wisconsin from forty-five to fifty-four.

"The situation in New England is now ominous for the future. Every state has lost and it appears that the rural population is becoming intellectually sterile. The losses of New York, New Jersey, and Maryland, in spite of, or it may be because of, their enormous increase in wealth, are startling. The losses of the eastern states are counterbalanced by the gains of the central states, notably, Illinois, Minnesota, Iowa, Missouri, Kansas, and Nebraska. Westward does the course of science take its way but it is not gratifying if the eastern states do not equal the cultural nations of Europe before losing their leadership. This may indicate a waning of the world's great era in science."

In 1906 one-half of the leading scientific men of the United States resided in the South Atlantic states and somewhat more than one-half had been born there. In twenty-six years the proportion of those born in these states has fallen to one-third and of those residing there, to forty-four and one-half per cent. "There has obviously been no change in native ability in the course of a few years. The only suggestion here made is that the state universities and denominational colleges of the central and western states are more nearly in touch with the people than the privately controlled universities of the east and have proved to be the better agencies for the selection and training of those having ability and ideal interests. The eastern universities provide education for more men who become leaders

in science than the states produce. As American students formerly went to Germany for advanced work, so in a later period they tended to congregate in the endowed universities of the Atlantic seaboard.

"Of the institutions from which the six hundred and one scientific men added to the list received their degrees, Harvard leads with forty-one bachelors, sixty-two doctors of philosophy, and three doctors of medicine. It is passed, however, by Chicago in the number of doctorates. . . The privately endowed universities still lead in the number of scientific men for whose education they were responsible, usually some twenty to twenty-five years ago. . . The private colleges are losing the influence that they formerly had. . . Another change that cannot be regarded as wholly auspicious is the small number of the younger scientific men who have studied at foreign universities. . .

"Of these scientific men sixty and seven-tenths per cent hold academic positions as compared with seventy-three and eight-tenths per cent of those in the last of 1910. It has been recognized that there has been since the war a movement of scientific men from the universities to the research and industrial laboratories and we have here a measure of its extent. . .

"Harvard has on its faculties eighty-nine and five-tenths of these leading scientific men and has gained twenty-three since 1906. Under the existing system of university administration, honor should be given to Mr. Eliot and Mr. Lowell for maintaining high academic traditions. In 1906 Harvard had sixty-six and five-tenths of our thousand leading scientific men, Columbia sixty, and Chicago thirty-nine. Now of 1176 leading scientific men Harvard has eighty-nine and five-tenths, Chicago fifty-three and five-tenths, and Columbia forty-six and five-tenths. It should also be noticed that Harvard has twenty-one of the younger men of the group of two hundred and fifty, as compared with fifteen at Chicago and seven at Columbia. Following these three universities are Yale with forty-two and five-tenths and California and the Johns Hopkins bracketed with forty and five-tenths. Cornell, which comes next, has lost relatively. There then follow the three state universities, Michigan, Wisconsin, and Illinois, of which Illinois has gained the most. Next, come four endowed institutions, Stanford, Pennsylvania, Princeton, and the Massachusetts Institute of Technology. Washington (St. Louis) is in the same group and has the largest gain. The only other universities having ten or more of these leading scientific men are Minne-

sota and the Ohio State. Apart from Columbia the universities that have lost most relatively are Missouri, Wesleyan, Syracuse, New York, and Virginia. . .

"The past twenty-six years have witnessed the development of endowed research institutions and the Carnegie Institution at Washington now stands next to Harvard and Chicago in the number of its scientific men of distinction. The Rockefeller Institute, limited to medical research, has also attained a high position. In this period the Carnegie Institution has increased from seven to forty-seven; the Rockefeller Institute from three to nineteen. The Boyce Thompson Institute, the Wistar Institute, and the Mayo Clinic also show gains. The American Museum of Natural History and the New York Botanical Garden, with respectively thirteen and eight of the scientific men, rank before most universities and show a gain since 1906. It is of interest that these institutions can flourish under support and control partly private and partly public."

Science, vol. LXVI, no. 1717

TEACHING THE SCIENCES.[1]—The scientific method is everywhere extolled and within certain limits is rigorously applied. Yet the public mind, reinforced each year by a veritable army of youth which is marched through scientific laboratories and lecture rooms, museums, and observatories, is as untouched by scientific method as if no such thing existed. Even the men of science themselves, when out of sight of their own laboratories, betray the most astounding willingness to become the victims of rumors, dogmatic assertions, and emotional appeals of every sort. The fact of the matter would seem to be that scientific training and scientific method, despite all the time and labor and money that have been lavished upon them, have thus far failed to take hold of the minds and temperaments of vast numbers of those who have been offered scientific training in greater or lesser part.

Reflection on these exceptionally interesting facts prompts various queries and suggestions. Part of the difficulty may be found in the fact that science has been suffering from what may be described as a superiority complex which has prevented it from realizing its true place in the scheme of things. There is certainly no region or realm into which science does not or ought not to aim to penetrate, *on the plane in which science moves*. But that plane is, as every scholar in the field of human thinking must realize, a subordinate one. It

[1] Report of the President of Columbia University, 1926–27

is the plane upon which the world appears as made up not of definite and independent objects, but of infinite series of changing units whose inter-relations and inter-dependencies are all-important and all-controlling. To science no object is independent. Each depends on every other and dependence—relativity—is the controlling principle of the universe. There remains, however, that still higher plane upon which the universe appears as a self-dependent, self-related, self-active totality. It is on this plane that philosophy lives and moves and has its being, and on this plane that art and music and literature find the inspiration and the motive of those insights, aspirations, and intuitions which pave the path to beauty.

This is neither the time nor the place unduly to argue these fundamental principles, but it is the time and the place to point out that if science as an educational instrument has not done what might reasonably be expected, it is first of all because it has not recognized the limitations that rest upon its place and function in the scheme of things. In the second place, science has been in large part badly taught and in large part is badly taught today. The sole reliance upon the laboratory method for introducing students to an understanding of scientific method, scientific fact, and scientific accomplishment is well-nigh disastrous. For the narrow specialist it does its work well, but for him who wishes to know something of modern science as an instrument of culture and as a branch of organized knowledge, it is not the correct point of departure. The laboratory method is the true method of discovery but it is not the true method of elementary exposition and instruction. First of all the student approaching for the first time any part of the field of scientific knowledge should have that field described and explained to him, its relation to other fields of scientific knowledge pointed out and the main lines of its historic development described and illustrated. The student of physics, for example, should be shown how physics has come to be; where and how it originated; what are its relations to mathematics, to astronomy, to chemistry; when and how did it pass from what may be called its astrological to its astronomical phase; who were the personalities who first unfolded and defined fundamental physical facts and laws; what did they look like, when did they live, what was their relation to their contemporaries. In other words, the student approaching the subject of physics should be made to feel that physics instead of being a very small part of a cross-section of the world of today is really a splendid intellectual discipline with

a long and notable history, and that it has come to be what it is by steps and stages that can be easily marked out and mastered. The moment the student gets this view of physics, his study of it takes hold of him with redoubled power because he sees himself dealing with a vast and continuing human interest. Then is the time for the laboratory method to be drawn upon to show him the technique of present-day knowledge and present-day discovery. In short, the natural and physical sciences have an enormous value as cultural subjects which has been in large part lost by bad methods of teaching and presentation. The specialist gets from his study of science all that he needs for his specialty, but science meanwhile stands apart from the general stream of cultural influence and development. Faraday and Maxwell, Huxley and Tyndall, Berthelot and Pasteur, Helmholtz and Kelvin, as well as our own Pupin and Millikan are scientific teachers of a different type. They all have in high degree the power of so interpreting science that at their hands it becomes a genuine instrument for the improvement of popular thinking and public action and a vitally important element of broad and fine culture.

NICHOLAS MURRAY BUTLER, Columbia University

SPECIALIZATION AND COOPERATION IN SCIENTIFIC RESEARCH.—Research must be more generally encouraged and supported. You may have thought, in my illustrations of the advantages which have been derived from research, that I gave undue emphasis to invention and commercial development. I did so purposely, for I wished to bring out a contrast. Where immediate financial returns are in sight, the keen search for profits which spurs our business life brings quick support and reward. Thus industrial research and development are coming more and more to be looked upon as shrewd business policy. Purely scientific research, which is absolutely prerequisite and basic to invention and development, is, on the other hand, generally carried on at a personal sacrifice and cramped for facilities. The average scientist has to battle against the odds of other supposedly prior duties in order to get time for concentrated thought and sustained experimental effort. . . Whence, then is support for scientific research to be obtained?

In the first place this support should come from those same funds which support the other activities of our universities, on the ground that research is an essential element and method of education. In

the second place it will come from altruistic citizens and organizations who possess the wisdom and imagination to visualize the possibilities which research will uncover for the future. In the third place, as I have suggested, it should come from industrial and business organizations. I should like to see all such enterprises which profit directly from the work of science taxed to support research. Probably this can never be done by legal means, but its equivalent may be brought about by publicity and the force of enlightened public opinion. If, for example, a large proportion of such industries could be induced to share the burden of supporting research and this were done on a large scale, no one industry would be handicapped in respect to the others and from the widespread nature of the research thus made possible, every industry would have a reasonable expectation of obtaining something to its direct advantage in addition to the indirect benefit of general business stimulation. Such is the justification of the "Hoover Fund" which the National Academy of Sciences is attempting to raise from large industries with the strong backing of Secretary Hoover. Finally, support may come from the government, if this can rise above the pressure of political struggle and popular appeal for tax reduction, and look to the welfare of the future. True, the government is now supporting a few research agencies, but on a very niggardly scale, in very restricted fields, and with such pressure for immediate practical returns as to drive out those scientists who might do big things and almost to kill the possibility of that type of research which might have great consequences.

It has been said that civilization is measured by the degree to which the people will sacrifice present desires for the sake of future benefits. On this basis the degree to which we support research should count heavily in estimating our degree of civilization.

The second conclusion which I would draw is that: *The universities must be the chief agents and mainsprings of research.* There is no organization other than the universities where there are gathered together the men of scholarly training capable of carrying on research in the whole field of scientific inquiry. If there *were* some other suitable organization, it is there, rather than to the universities, that young men would go for research training, and this organization would at once *become* a university. Such work is undoubtedly the function of the universities.

Furthermore, it is a well-known paradox that the discoveries

which have led to the greatest practical results have not been made by the men who were seeking the practical results. The reason for this is plain. The man who is seeking a certain end is mentally circumscribed by the methods which are already known for attaining this end. He may perfect some previous process, or he may see how to apply some phenomenon or principle which has not hitherto been applied, but his mental state handicaps him in discovering anything fundamentally new. The basic research must, therefore, be a free and unfettered search for truth. It is the universities alone which can offer any considerable opportunity for such endeavor.

Besides this, it is to the universities that the industrial laboratories and government bureaus must turn for their trained men. The head of one of the largest electrical companies recently stated that the only limitation to the development and extension of his industry lay in the dearth of trained men fitted to take charge of the developments which they had in sight.

The third lesson I would draw from the experience of the past is that: *Research must proceed by specialization.* Research has always required concentration, but it did not formerly require intense specialization. Look, for instance, at Benjamin Franklin, at once philosopher, publisher, scientist, and diplomat. Even in science he did not specialize. . .

But today each individual branch of science is larger than the entire body of science of Franklin's day. The philosopher may still contemplate the entire field of knowledge and consider its interrelationships, but no man can do creative work in the entire field. . .

With this tendency comes the necessity of a balancing movement, which is my last conclusion: *Research must become more and more cooperative.* An obvious handicap and danger of specialization is that a man may not know, and in fact now-a-days cannot know, even all the aspects and relationships of his own special field, however small. Hence, unaided, he becomes helpless through the very specialization which he hoped would give him power. The remedy for this danger lies in cooperation between workers in closely related branches of study. . .

To take just one example: Though physics is the most mathematical of the sciences, the average research physicist and the average productive mathematician speak languages unknown to each other. To make advances in one field available for progress in the other there has arisen a chain of connecting links. We have the experi-

mental physicist, the theoretical physicist, the mathematical physicist the applied mathematician and the pure mathematician. I do not believe there is a single living scientist who could at the same time classify under all six headings. There is possibly one, named Einstein who might classify under five, and there are very few who could classify in four of these groups. . .

Several solutions may, however, be suggested as of proven value and worthy of encouragement.

One of these is the encouragement of research in the so-called border-line fields such as mathematical physics, physical chemistry, biophysics, biochemistry, etc. Not only are such coordinating studies necessary, but they are, in my opinion, the most fruitful fields of investigation. Nature herself is not divided into a physical world, a chemical world, a biological world; she is a unit. These artificial distinctions have been introduced for convenience and because of our inability to see the whole field at once. . .

The necessity of coordinating border-line work is recognized by such far-sighted organizations as the General and International Education Boards and the Rockefeller Foundation which have, for example, supported the great system of National and International Research Fellowships, one of whose guiding principles is the stimulation of research in the border-line fields. In our universities further facility and encouragement should be given to men to prepare for work in these directions.

Another solution can advantageously be advanced by wise administration of the universities. There seems to be a wide-spread but ill-founded feeling that all departments of a university should be developed together and kept closely abreast. . .

Much more effective in advancing knowledge as well as in bringing distinction to the university is the policy of supporting, to the available limit, certain departments selected because of their already outstanding character, or because of the traditions and purposes of the university, or for any other reason. If these favored departments are chosen in a coordinated group, then the university becomes an active center for the development of that field and the promotion of cooperative effort. For example, one institution may choose to give *particular* facilities for advanced work in classics and languages, another in historical, economic, and social sciences, another to physical and biological sciences, etc. . .

Through concentration of effort in a coordinated group of depart-

ments, a university has the opportunity not only to correct the dangers of over-specialization, but also to take a strategic position in fulfilling its obligations to society. . .

However, there is another direction in which more effective organization is possible within the universities themselves! Departments of a somewhat more flexible nature than those to which we are accustomed and which could, more than now, be built around one or two outstanding men in the department, could give these men an opportunity for organization and concentration of effort which is now rarely possible. This would, of course, require careful selection of men. In this matter of organization of departments around the most productive and outstanding men, of taking for granted that they will have research assistants to increase the efficiency of their labors, of selection and recognition of men on the basis of merit and promise rather than seniority, and of wise procedure in the selection of men to fill important posts, America is far more backward and bound by tradition than are those European countries in which scientific achievements have been most rapid. It may surprise you, for instance, as it did me, to learn that in America, the land of wealth and opportunity, there is no university which is able to offer a salary equal dollar for dollar to salaries which universities even in war-ridden Germany will offer to secure the outstanding men. As is the tendency in other things American, our tendency to standardize, which is so useful in some directions, is interfering with our ability to recognize, secure, and do our best. This situation in our universities is, I believe, a grave one if we set as our ideal the best possible achievement. . .

KARL T. COMPTON, Princeton University,
Science, vol. LXVI, no. 1715

RESEARCH AND TEACHING.—A considerable part of the criticism aimed at the modern medical school boils down to the charge that too much emphasis is placed upon research, and too little attention given to the teaching of existing knowledge. Defense against this accusation involves a general discussion of the functions of the departments which instruct in the preclinical sciences, and calls for some consideration of the assertion—frequently coupled with such criticism—that "research and education are not the same thing" and had better be separated. This last suggestion, we believe, is a pernicious one chiefly because is fails to recognize the importance

of a high order of scientific background for that most difficult of all teaching, the exposition of the simple, basic facts to beginners—a task that is incompletely performed unless the information conveyed arouses curiosity and awakens the critical faculties.

If the scientific laboratories of medical schools were to be planned to serve purely teaching functions, they could be organized cheaply and simply; though it sounds a paradox, such limitations would defeat their very teaching purposes. We are admitting, of course, that medical students cannot be graduated as investigators, and it is surprising that any one should assume that otherwise reasonable educators are not aware of this. But we assert that the separation of investigative activities from departments engaged in the exposition of any subject in medicine would irreparably damage their purely educational effectiveness. Men who devote themselves exclusively to the teaching of subjects as actively advancing as are the various departments of medical knowledge, with little or no interest in investigation, show themselves by this testimony inadequately endowed with intelligent curiosity and imagination. They are manifestly pedants whose faculties are left unstirred by the most fascinating invitation to intellectual adventure that modern thought has to offer. The teacher of a growing science who abstains from inquiry is as much out of place in a laboratory as a prohibitionist in a wine cellar. Moreover, to teach adequately and inspiringly signifies not the dispensing of other men's thoughts but, rather, the distillation of accumulated knowledge through the mind of the expositor, carrying over a part of himself in the process.

HANS ZINSSER, Harvard Medical School,
Bulletin of the Association of American Medical Colleges, vol. II, no. 3

THE ETHICS OF HIGHER STUDIES.—Scholarship does not consist primarily in the quantity of knowledge a man possesses, but in the way he possesses it; and as I want to leave you with that idea, I shall tell you immediately that a true scholar is essentially a man whose intellectual life is part and parcel of his moral life; in other words, a scholar is a man who has decided, once for all, to carry all the requirements of his moral consciousness into his intellectual life. If you do it immediately, if you take this pledge and stick to it, you have already begun to be true scholars. If you do it more thoroughly than your teacher does, you have already begun to be a

better scholar than he is, and you are on the only road that leads to broad and deep scholarship.

The first virtue you will impose on yourselves by taking such a step will be intellectual honesty. We know perfectly well what moral honesty is, and we would never, for the world, allow ourselves to sin against it; intellectual honesty is a much less known virtue, and higher studies will precisely teach what it is. Moral honesty is, at the bottom, a scrupulous respect for the rules of justice; intellectual honesty is a scrupulous respect for truth. . .

But take a really honest book, a really honest lecture, a really honest dissertation, and you will see that all this display of quotations, references, facts, documents, and observations are there only because it was morally impossible to omit them. The true scholar who gives you a bibliography will certainly give you the titles of all the books he has read concerning the question, and only those titles. He is not the man to quote a book he has never used, or to use a book he never quotes. He would not do it, because he thinks his reader has a right to know whence he derived his information and where one has to look for more. The true scholar never says that a man wrote such and such a sentence without saying at the same time where he wrote it, not because it looks well to make quotations and to give references but because we have a right to verify his quotation and to see whether, in its original context, the sentence has that very meaning which it seems to have when cut loose from it. If you are a true scholar, and write down that quotation for me, you will not write it from memory at the risk of changing a word or two in it, because through changing its words you might change its meaning, impose on a man what he never said, and impose on me the false conviction that this man said what he really had not. There are no negligible details for intellectual honesty any more than for moral honesty. . .

My only contention is that quantity can be considered as negligible. For, give me quality, and quantity will follow necessarily, exactly as you start or you strengthen a moral habit every time you act in a righteous way. By and by, through the repetition of the same effort, you achieve an accumulation of knowledge that may be considered as the necessary result of your perseverance in intellectual honesty. . .

I have nearly finished, but that which is most difficult to say has not been said. As in painful surgical operations, I shall try to be

very short, and to get through as quickly as possible. There is a sure recipe for holding the attention and winning the hearts of modern young people, namely to invite them to the wrecking of old codes and of ancient idols. If you tell them they are perfectly free minds before a perfectly new world, and add, if you choose, that they have a right, nay, a duty, to trample down all the old standards of conduct and knowledge, and to lay down the bases for new ones, you are very likely to win their approval. Unfortunately, if adulterated goods may sometines turn out to be good sellers, buyers, as a rule, are sooner or later sorry they bought them. What I shall preach to you, on the contrary, is a much neglected, despised, and unpopular virtue, namely, humility. Let us clothe it in a more modern garment and call it submission to truth or, if you care for technical terms, "objectivity." I commend it to you at the risk of displeasing you today, but with the hope of winning your approval in the future. . .

Certainly, there was once a superstition that all that was old was true; but we are now suffering from the contrary, and no less dangerous superstition, that all that is old is false, and all that is new is true. In fact, time has nothing to do with truth. New truth can and must replace old errors, but it cannot replace older truths. If you have a right to say that nothing is true until it has become true to you, this does not mean that it is because a truth has become your own truth that it is true; on the contrary, it had to become yours because it was, is, or will be, true to every normal human mind that is able to grasp it. . .

Now let us imagine a university where every student would conduct his own studies according to the rules of the strictest moral honesty, keep his mind open to old truths, and fit himself for the discovery of new ones. One would not consider such a place as a mere nursery of future scholars, but as being already a meeting-place of young scholars bound to do credit to their own university and their country.

ETIENNE GILSON, Harvard University,
Harvard Alumni Bulletin, vol. XXX, no. 5

THE COLLEGE STUDENT'S OBJECTIVE.[1]—While the population of the United States has increased by about 15 per cent since the year 1900, the college enrolment, according to some authorities, has increased eighty-five per cent. This extraordinary increase in num-

[1] Report of the President of Brown University, 1926–27

bers does not signify any increase in intellectual capacity or even any increase in the hunger for knowledge or the desire for scholarly pursuits. It rather signifies an immense desire to rise in the world, to occupy positions of honor and power. Education is to such boys not an intellectual opportunity but a negotiable asset. Possibly this view of a college education is as old as America itself. Indeed, our venerable charter of 1764 states one great object of the University to be "preserving in the Community a Succession of Men duly qualified for discharging the Offices of Life with Usefulness and Reputation."

In our time, however, the objective of the majority of college students is, quite definitely, preparation for business life. In my own college class—which now seems antediluvian—only twenty-seven per cent of those who graduated entered any kind of business. The great majority went into "the learned professions" or into school-teaching. Now the proportions may be nearly reversed, and the great majority covet a life of action rather than of thought, and frankly seek leadership in manufacture, transportation, banking, or public office. This may lead to a demand for purely vocational courses, which would imperil the foundations of liberal education. Such a demand we shall steadily resist. The bank clerk requires indeed a knowledge of accounting, but four years of college study are not needed to give him that. The college may give him, however, such knowledge of American history and government, such acquaintance with European and Oriental viewpoints, such knowledge of the temperamental republics south of the Rio Grande, such psychological insight into the vagaries of individuals and nations, that he shall be ready for any responsibility when the banking world is looking for leadership. Men trained through the American college for the guidance of American business may help us to pass from the primitive ideal of making money to the nobler conception of public service through manufacture and exchange.

Another obvious change is in the heritage and the racial and cultural environment of American college students. . . Now, a glance at the list of names in any college catalogue will reveal the multi-colored population of the college world. French and Italian names, German and Russian names, mingle with uncouth syllables from China and Japan, and the roll of a college class may be as polyglot as the list of musicians in a symphony orchestra. America could never assemble a respectable orchestra from men of the Nordic race

only. Most of our progress in music and art is due to impulses from European peoples. So in our colleges today the keenest, most eager minds are often those of foreign extraction, who may lack social background but are hungry for intellectual adventure. For this reason our urban universities may become the best avenues of international understanding. Are they such today? Does this juxtaposition of the college campus alleviate misunderstanding, or promote it? Does the American college remove our divergences and establish a true brotherhood, or does it in many cases sharpen racial and cultural prejudice? Our colleges will surely never reject any man because of his blood or his religious affiliation. But the American college is solemnly bound by legal and moral obligation to preserve its own identity, to be loyal to the ideals of its founders, and to receive at any one time only so many students of alien tradition as it can properly assimilate and guide.

W. H. P. FAUNCE, Brown University

HOME-ECONOMICS COURSES AS A MEANS OF GENERAL EDUCATION.—...The third reason possibly contributing to the decreased prominence of home economics in the senior high school is the increasing proportion of pupils who use the high school as preparatory to college entrance. The enormous increase in college enrolments which has been maintained steadily since 1919 has been reflected plainly in the high schools. Since most of the colleges and universities have set up certain subjects as necessary for entrance, the tendency in the more pretentious city high schools has been toward the promotion of these subjects. The social desirability of a college education has become part of the public tradition in America today in so overwhelming a way as to overbalance considerations of suitability and common sense. Many young people elect college preparatory curricula in high school without either the industry or the intellect actually to attempt a college course. The extent to which college entrance requirements may influence high-school curricula has been stated in detail in many places. In a report recently published by the American Association of University Professors, an excellent if somewhat conventional treatment of the subject of preparation for college is followed by the recommendation "that all college entrance be placed upon the basis of comprehensive examinations in four fundamental subjects [English, mathematics, a foreign language, and Latin or a science], with flexibility in the other requirements and acceptance

of school certificates for them, plus a full consideration of school records, intelligence tests, and personal testimonials."[1] The effect of this recommendation on the curricula of such high schools as may give it consideration will depend on the meaning given to the words "comprehensive examinations." If the four subjects mentioned must be each covered in the high school by three or four years of instruction, at least twelve of the fifteen entrance units will be used up by them. The amount of election left is too small to be entitled to any serious consideration.

The writer is inclined to criticize the option of Latin or science in the list of fundamental subjects. Evidently the committee had in mind the selection of tool subjects with the open implication that the high-school course is in all senses subordinate to the later college work, that it is a suspended, rather empty interval of getting ready to learn and do things of significance. The more intelligent candidates for college entrance are likely to rebel against this complacent mandate, and its avowed purpose of selection of the best for the colleges may therefore be defeated to some extent. In any case, it is a question whether the ethics of modern civilization can be served adequately even for these selected few by a program of adolescent education which does not include a natural science. In the opinion of the writer, such natural science is most effectively taught, at least to girls, by a properly planned home-economics course. This opinion applies with even more weight to the group of girls who are not preparing for college.

AGNES FAY MORGAN, University of California,
School Review, vol. XXXV, no. 7

CORPORATION SCHOOLS.—The typical business man has very little faith in the ability of the traditional schoolman to train his workers for him. This probably is due to the fact that those in industry acquired their vocational skills "on the job" after they were done with formal training. Many have found, however, that it is more efficient and profitable to train new workers in a systematic way than to rely upon their "picking-up" information and skills. Consequently, there has been an increasing interest in the creation of corporation schools whose sole function is to train workers for specialized tasks. Here the business man hires the teachers for his school, decides as to the qualifications of the students, determines

[1] "The Selection, Retention and Promotion of Undergraduates," *Bulletin* of the Association, October, 1926

the course of study and frequently pays the students while they are being trained. In some cases this has been done without consulting educational experts. In others, business executives have been guided by the job analysts, the curriculum makers, and the educational psychologists. As a result, some of the corporation schools have become model laboratories where efficient methods of trade training are being evolved.

The list of corporations which maintain company schools is an impressive one. . . In practically every one the company is giving its employees a type of training that the organized schools in their particular localities are not equipped, and probably should not be expected, to give. . .

The public vocational school is of necessity compelled to attempt to train as many workers as possible for as many types of occupations as are represented in the community. The shoemakers have as much right to demand that shoemaking be taught in the public vocational schools as the business men have to insist that typewriting should be offered. . .

The mission of the public school systems and that of the corporation schools is separate. For at least a generation the corporation school will be the dominant factor in the training of workers. During that time jobs to be filled will be analyzed so that a great body of knowledge will be accumulated for the use of those who specialize in vocational guidance and in the construction of vocational curricula. At present some few organizations such as the National City Bank of New York City have seen that they cannot hope to give their people all the related subject-matter they need. Accordingly, they have made specific arrangements with such institutions as New York University to handle this phase of instruction. In the hands of an educational administrator who knows the training possibilities of the work itself and the skills and information that should supplement the knowledge gained on the job, the corporation training school assumes the aspect of a real vocational university.

The aims of the publicly supported elementary and high schools and the privately run corporation schools are not antagonistic. The public schools have three functions. These are (*a*) to supply the general information and training represented in the traditional elementary and high-school subjects; (*b*) to give practical and industrial arts instruction so that careers may be selected with some degree of intelligence; and (*c*) to provide instruction in related subject-

matter to supplement vocational courses given in corporation schools. This last function may properly be taken care of in continuation, part-time, and evening classes. . .

In the most successful corporation schools in operation at the present time students are paid for the time spent in acquiring information that will be vocationally useful. When complete vocational information has been assembled, when definite training programs have been built on a foundation of job analysis, and when teachers of vocational subjects have been trained in sufficient numbers, it will be time enough to turn over vocational education to the publicly supported schools. In the meantime if the work of the publicly supported and the corporation schools is coordinated the result should be cultured, vocationally competent individuals. That, surely, is the desire of both schoolman and employer.

RICHARD S. UHRBROCK, University of Wyoming,
School and Society, vol. XXVI, no. 672

COLLEGE FOR THE SERIOUS?—What is it that colleges really *want* in their incoming students? . . . One of the most popular answers at the present moment is "seriousness." . . . To enter their bailiwicks a youth must be intent upon fitting himself for some definite sort of earnest work. Ideally he should know exactly what he wants to do after graduation, and be determined to do nothing in college that would not prepare him for his job. In other words, this is the increasingly popular vocational ideal in education. . .

Weaken liberal education under pressure from earnest students seeking quick vocational returns, and you will slowly but surely dilute the bloodstream of our infant culture. The glory of our arts colleges has rested in their ability, thanks to munificent gifts, to say to the reasonably well-prepared boy of moderate means or less: Come with us and grow, that you may keep on growing all the rest of your life. Here for four years you may enjoy what was once the privilege of princes, the prolongation of your precious youthful plasticity into manhood. While less fortunate boys must see their potentialities narrow under the stress of vocational competition, you may develop not merely a few, but *all* your powers in an environment rich in stimuli and equipped for promoting growth. . .

To oust the drones who are serious about nothing, or the sportsmen who are serious only about amusements—does not mean that we must insist upon what we have called vocational seriousness.

The public needs to realize that seriousness in a liberal arts freshman may be a less tangible, more mysterious thing than dogged devotion to a vocational plan. At its best it is a seriousness about general growth. Instead of single-mindedness, it is many-mindedness, instead of routine efficiency, it is spontaneous curiosity. . .

The liberal arts college deals neither in tangibles nor in quick returns. To see its real value takes patience and far-sightedness. For its members constantly look much less serious-minded than they really are. If boards of admission reserve colleges for the serious in the vocational sense, well, that will be serious for the colleges.

HAROLD A. LARRABEE, *Union Alumni Monthly*, vol. XVI, no. 10

THIS HONOR BUSINESS.—The only thing about the honor system that may be stated with finality is that college students do cheat in examinations, and that they feel no loss of dignity in so doing.

The honor system is a perennial topic for student editors. Either they are trying to have the system instituted, or they are working to bolster it, or, in most cases, they are explaining why it failed. Few, if any, remain unconcerned. All are certain it is "a good thing," an essential element in the university's creation of the mythical "well-rounded individual." This despite frequent and puzzled admissions that the whole litany of pledges, prayers, and prohibitions has failed to inhibit students from cheating. Further, the sheep refuse to expose the goats. In other words, students not only have failed to become honest, but also they have failed to continue the policing without which the misnamed honor system cannot stand.

It is impossible to explain why student morality fails to balk at cheating. It is much easier to determine why students cheat. College is a game, or a task, and the object is to get so many points within a given time. To "get by" is the primary consideration. If something else attaches itself in the process, well and good.

Whether it really matters that students cheat, who will say? Teachers from grade school to college are wont to remark that the cheater cheats only himself. "Go ahead and cheat," they say, "you aren't fooling me; you are fooling yourself." Probably true, but this theory is obviously unrelated to the practice of proctorship. So long as graduation is the goal, it is not surprising that so ungenuine a method of achievement as cheating should thrive.

The graduation goal is a mutual one. On the part of the students the desire is to be graduated; on the part of the universities it is to

graduate the students. The methods employed to this end concern themselves with the storing away of great quantities of factual information. Daily quizzes, weekly quizzes, term examinations are devised to get at the facts. The whole system lends itself to cheating. And it can be argued that cheating is no less a disreputable form of education than factual rote education.

The New Student, vol. VII, no. 17

SUMMER SCHOOLS, AN ADVERSE VIEW.—The growth of the summer school idea has been rapid. Apparently it has also been extensive. At the moment registration statistics at summer school sessions all over the United States are not available for 1927, but there are two safe guesses: (1) that more students attended summer school sessions in 1927 than in any previous year; and (2) that the number of students of college grade attending these summer sessions is to be numbered in the hundreds of thousands. There were 88,624 such students in the summer of 1926 in attendance at thirty of the largest schools.

In spite of the obvious popularity of summer sessions everywhere it may fairly be asked whether such unusual development of summer education is an unmixed blessing. It may even be fair to raise the question whether all this popularity is deserved. How much summer education is real education?

What are the chief motives impelling students to spend time and money on summer schooling? There are, the writer believes, four:

1. To earn additional credits toward undergraduate or graduate degrees.
2. To improve professional preparation (usually in the field of education) by taking special courses under certain distinguished professors.
3. To attend a recognized institution in order to have its official stamp for its promotion-value.
4. To live for a time in some metropolitan center in order to enjoy larger cultural advantages and thus secure wider horizons.

That these are worthy motives no one acquainted with the modern American trend in education will deny. There are no better... Yet it is certainly debatable whether summer sessions, as now organized at many of our universities, are wholly successful as educational agencies. After an experience covering four summer sessions during the last six years at three of the largest and most representative of

our American metropolitan universities, the writer is not at all sure that the American summer school is filling the need of a large proportion of its students.

There are various reasons for this situation. Most of them are unfortunately inherent in the system and thus not easily remedied. Here are listed only the more prominent of the factors which appear to affect adversely the efficiency of our summer schools.

In the first place summer sessions are overcrowded. The problem thus becomes one of mass education and there is grave doubt that mass education can ever be successful. The difficulties of the situation are clearly to be discerned in summer sessions where larger numbers of students use certain portions of the university plant than in the regular sessions of the year. The result of this huge influx is of course machine methods, large classes, lecture courses, and a standardization which leaves the individual and his little problem buried in the mass. There is some doubt that this process can be called education, however perfect the machinery of assimilation...

In the second place the courses in a summer session must be squeezed into short spaces of time...Catalogues declare that the same work is done in summer session as in the same course given during the university year. In practice this catalogue statement, like many another catalogue pronouncement, is hardly to be taken literally. Professors have been known to assert in the summer school classroom that it is a manifest impossibility to do the same work in six weeks with six class meetings a week as in a quarter of twelve weeks with three meetings a week, or in a semester of eighteen weeks with two meetings a week. Makeshift plans designed to pile up the required hours in the classroom hardly meet the situation. No student feels that he gets anything like double value for a class which meets in the morning and again in the afternoon of the same day, and few, either students or instructors, relish the two consecutive hours given on widely scattered days to certain courses at some summer sessions. These schemes do secure total hours but they fail to consider the learning process...Without doubt certain well-organized courses with narrowly defined limits can be (and are) very effectively given in short summer terms...The function of the summer course is clearly supplementary. It can hardly break a new furrow.

In the third place, the summer schools have not been wholly successful in divesting themselves of what may be called the "vacation

spirit."...The matter rests with the individual instructors. Most of them are young men who desire to be popular with their large classes. They are willing to do a considerable amount of work, but with fifty or a hundred students in a class a very little written work makes hours of drudgery for the instructor. So everything is lumped off in a term paper and an examination at the end of the course. The lecture method prevails...Certain it is that many students do not take their summer courses seriously. Once registered and lodged for the first time in a large city, the provincial student (something like half the great summer school population must come from the small towns) sets out to "do the city."...

The problem of securing competent teachers for summer school courses is undoubtedly a hard one. The writer's experience has been to find clever young men as instructors...With thousands asking to be taught there are not great teachers enough to go around. Naturally the best men are well paid for the regular term and do not need to sacrifice their summer vacations to an uncomfortable routine of teaching. As a matter of fact few of the really first-class men do it...

In the fourth place and finally: it is probably true that intellectual work is most effectively done at reasonably cool temperatures. Most of the summer days in most of our large cities are too hot for anything but the most urgent work of any sort, physical or intellectual. When one considers that most summer school students come to their summer course almost immediately after a year of nervous expenditure as teachers in the classroom, it is easy to believe that many in summer classes are too fagged to get proper results from their work. The writer knows this to be the situation with many students, himself among them...

There is another way—and some students who have tried the summer schools in recent years are drawn to it. There is for them more education in the right books and the right companion in a lodge in the Rockies than in a crowded classroom on upper Broadway. As an individual remedy it is remarkably efficacious. As a panacea for all the ills inherent in our present summer school system it can assert no claim. The monastic ideal can hardly function in mass education.

RALPH L. HENRY, Miami University,
School and Society, vol. XXVI, no. 676

LOCAL AND CHAPTER NOTES

BENNINGTON COLLEGE.—The college to be opened in old Bennington, Vermont, in the fall of 1929, announces itself as "a liberal arts college for women based on modern standards of progressive education." Its policies will include: "emphasis on the individual student and her expanding interests; learning through activity and living; a curriculum planned for women in the modern world; an organization of community life designed to break down artificial barriers between teacher and student and between curriculum and extra-curriculum, to the end that attitudes, appreciations, and emotions, character as well as the intellect, may develop along constructive lines; a conscious elasticity in educational plans; a financial program which ultimately should make the college self-supporting." The president of the Board of Trustees is quoted as saying: "In the selection of students marked ability, either special or general, will be of first importance. We shall not be interested in the student who is able merely to meet standard minimum requirements. Special excellence in one field alone may qualify a girl, but passing mediocrity in all fields will not."

Robert Devore Leigh, Hepburn Professor of Government at Williams, has been appointed as the first president.

BUCKNELL UNIVERSITY, READING FOR HONORS IN ENGLISH.—The faculty has recently voted to establish Honors Courses beginning with the academic year 1928–29. For the present, honors work will be confined to the last semester of senior year and to the department of English. This is the plan in brief. Students majoring in English who by the end of the first semester of senior year have secured one hundred and twenty quality credits, and completed one hundred and five hours of work, including two minors and all other required work outside the English department, with a general average of eighty per cent in all work, an average of eighty per cent in all work done in English (which must include at least the required courses of the freshman and sophomore year and one course in advanced composition), and a grade of ninety per cent in at least one course in advanced English literature, may with the permission of the department read for honors during the last semester, an honors seminar, and devote the rest of their time to independent study. During this semester they may attend the meetings of other classes,

but will be excused from all ordinary requirements of regular attendance, recitation, reports, and examinations. At the end of the semester they will be given an oral examination covering the entire field of English literature. Those who successfully pass this examination will receive diplomas in which it is specified that the degree of Bachelor of Arts has been granted "with honors in English." Those failing to pass the examination may on the recommendation of the department be granted the regular degree without honors, or may be required to repeat the semester's work.

The extra burden of the honors seminar is to be assumed by the members of the English department in addition to their other duties, those of professorial rank conducting the seminar for periods of two or three weeks each, and jointly conducting the final examination.

UNIVERSITY OF BUFFALO, A METHOD OF HANDLING THE DOUBTFUL STUDENT.—In the definitely municipal or state university, it is sometimes difficult to deal as stringently with entrance requirements as one would like. The great majority of those just passing high school are not good material. Over fifty per cent from the lower half of their high school courses will not survive freshmen classes taught by instructors with advanced training and scholarly ideals.

One may attempt to weed out these low cases either by content examinations (such as college entrance board examinations), by psychological tests, or by the positions of students in their classes on graduation from high school. In most colleges the last method is found to be the most satisfactory. However, in a state or community institution this type of elimination is often resented if not considered unjust. In fact no one has proved that the majority of doubtful students cannot be developed to the point of studying satisfactorily.

Another method of dealing with the doubtful and probably inferior student is through a type of educational conversion and reform by training that will help students rise to a new level of scholastic accomplishment. At the University of Buffalo we have tried this device and with fairly good results so far. In the summer of 1926 we handled thirty-two students, and last summer forty-six who were from the lower two-fifths of their high school classes (or lower three-fifths from small high schools) in a three and a half weeks' intensive course on "How to Study" before admittance to the freshman class. This training period had the double effect of making them better adjusted to certain valuable habits of study-

ing, and of giving them information which was either immediately practical or inspirational, and which gave them new insights into scholarly work.

The drills that were the most valuable we believe were in writing English compositions (under a very competent instructor in English), in speeding up reading on the basis of instructions on rapid reading together with some twenty-five sessions of timid reading followed by tests of comprehension, and in notetaking.

These three drills had the advantages of being of value in almost every course in college and the last two at least were quite objectively measured. The speed of reading was improved by more than fifty per cent on the average without loss in comprehension; and note-taking attempts were changed from illogical, and incomplete scribbled sentences to notes that were really fit for rapid reviews, ordered and complete. This last drill requires an unusually large amount of close individual interviewing as well as a quantitative system of marking.

The lectures which were given by various faculty members and others (used as a basis for note-taking) were also of value in giving many suggestions. They covered such topics as "Concentrating Attention," "Methods of Memorizing," "How to Read More Rapidly," etc., though there were some lectures also given on more general topics as "Art and Culture," "History of English Words and Expressions," "New Developments in Physics," and the subject of "Genetics." A good deal of outside reading was done also in various books chosen primarily to increase the purpose and drive of the student. Biographies were believed to be especially valuable for this purpose.

The efficacy of this type of "How to Study" course was evident, I believe, from the quality of work done by these students later on. Whereas previously approximately fifty per cent of the freshman coming from the lowest two-fifths of high school survived in good standing in the sophomore year, at present under this system seventy per cent or over become satisfactory sophomores. On the average, such students, after the drills, etc., compare about evenly with those from the middle fifth of good high schools who do not have such training. They do not equal those from the upper two-fifths of the high school group, as naturally a three weeks' course is not a substitute for consistent work done throughout high school. Ultimately I believe we shall pay more attention to improving the capacity of the

student to handle college work, and less to eliminating them because they are unfit.

E. S. JONES

JOHNS HOPKINS, NEW PLAN OF COLLEGE FACULTY.—The year 1926–27 was a transition one between the College as it has been and the newly reorganized University. During the year the Academic Council adopted resolutions by which, beginning in October, 1927, the organization of the Philosophical Faculty became as follows:

1. A Faculty of Philosophy, whose various departments are so organized as to admit students for advanced study on the general basis of two preliminary years of collegiate work. It is definitely understood that only exceptional students will be admitted with this preparation, and that each department will establish its own standards of admission.

2. A College of Arts and Sciences in which instruction will be limited to such courses as may be specified by the Academic Council.

3. At the end of the second year of residence in the College, qualified students who wish to pursue certain courses may do so with the consent of the department of the Faculty of Philosophy concerned. They may become candidates for the degree of Master of Arts or for that of Doctor of Philosophy in that department by satisfying the requirements of the Board of University Studies.

Others may, with the consent of the Board of Collegiate Studies, be permitted to remain in the College either to prepare themselves further for admission to the Faculty of Philosophy or as candidates for the degree of Bachelor of Arts. Such permission will be given only to those students who give evidence by the character of their work that they should be encouraged to acquire a liberal education or to prepare for professional training.

4. By consent of the proper Committee and of the department of the Faculty of Philosophy concerned, students in the College may be permitted in special cases to take certain courses in the former, for which credit will be given toward the A.B. degree.

JOSEPH S. AMES

OHIO STATE UNIVERSITY, EDUCATIONAL CONFERENCE.—The Eighth Annual Ohio State Educational Conference will be conducted by the university on April 12, 13, and 14. Its main subject will be "Teaching as a Fine Art." The second day will be devoted to sectional meetings on a wide variety of topics of interest to superinten-

dents, principals, and teachers of almost every secondary school subject.

WELLESLEY COLLEGE, PENSION AND INSURANCE PLAN.—*Funds.—How Provided:* Five per cent of the annual salary of members to be contributed monthly during the college year by equal monthly deductions from salary.

Five per cent of the total salaries of eligible members to be contributed annually in advance by Wellesley College.

Retirement for Age: 1. Retirement for age shall take place between the ages of sixty-five and seventy and shall be determined by the Trustees of the College.

In event of retirement for age the individual member shall receive an annual income for life purchased by his own contributions under one of the three plans outlined later.

2. The College will add to the annuity purchased by the contributions of the individual member a life annuity equal in amount to the refund annuity purchased under one of the three plans.

3. In event the amount of refund annuity purchasable by the contributions of the member exceeds one hundred dollars per month, the amount of annuity purchased by the College shall not exceed one hundred dollars per month.

In event the amount of annuity purchasable by the contributions of the member is less than fifty dollars per month the College will purchase a life annuity equal to the difference between the annuity purchased by the member's contributions and one hundred dollars per month.

The provision for minimum pension shall not apply to members who receive from the Carnegie Foundation a free pension which, together with the annuity and pension payable under the College plan, shall exceed one hundred dollars per month.

Permanent Total Disability (prior to retirement for age): In event the member becomes totally and permanently disabled through either accident or illness before reaching the retirement age he shall receive a definite provision dependent upon the plan selected.

Death While in Service: 1. The member shall receive a definite provision in accordance with the plan selected.

2. The College in event of permanent and total disability or death while in service will provide through the medium of a group

life insurance contract a payment equal to a full year's salary at the time of such disability or death but not in excess of five thousand dollars, payable in regular instalments as determined by the Board of Trustees.

Termination of Service: In event of termination of service with the College (except in case of total and permanent disability or death), the member will receive the termination provisions of the plan selected.

The member will have the privilege of exchanging the group life insurance policy of the same amount without medical examination provided the application is made to the insurance company within thirty-one days of the date of termination of service. Thereafter the member will pay the entire premium direct to the insurance company.

Permanent and Total Disability: In event of total and permanent disability of members prior to age sixty the full amount of life insurance payable under the group life insurance contract will be paid in monthly instalments to the member so permanently and totally disabled in addition to any permanent total disability benefit to which the member may be entitled under investment plans I, II, and III. In event of permanent total disability of members occurring after age sixty but before retirement on account of age, the College will, on proper assignment of the member's group life insurance certificate, pay to the member so disabled in monthly instalments, amounts equal to the face value of the member's certificate, and in event of the member's death before receiving the full amount of the value of the certificate the balance up to the full value will be paid to the member's beneficiary by the College. The payments so made will be in addition to any total and permanent disability benefits to which the member is entitled under investment plans I, II, and III.

Description of Investment Plans—Plan I: The member may elect to deposit his monthly contributions in a trust fund established by the College and held separate and distinct from the regular College administrative funds.

Under this plan interest at the rate of four per cent will be added semi-annually to each individual's account, and the total proceeds will be applied at the retirement age of the member to the purchase of a refund annuity in a standard insurance company. The amount of annuity so purchased will be in accordance with the annuity rates in force at the time of retirement.

In case of death, permanent and total disability, or termination of service for other reasons prior to retirement age the full amount to the credit of the member with four per cent interest credited semi-annually will be returned to the member's beneficiary or estate in event of death, and to the member in case of total permanent disability prior to retirement age. In event of leaving service of the College the full amount to the credit of the member with four per cent interest will be returned.

Plan II: The member may elect to purchase a deferred annuity in the Teacher's Annuity and Insurance Association of New York, which is an insurance company conducted under the auspices of the Carnegie Foundation.

Under this method each member receives a form of annuity policy which guarantees the payment of the definite annuity at a fixed retirement age, and which further guarantees in event of death the return of all deposits with accumulated interest at four per cent. In event of termination of service this contract or policy may be continued at the same rate provided the member continues in the teaching profession, but at ten per cent additional to the rate in event the member discontinues service in the teaching profession.

There are no guaranteed cash values under this annuity contract or policy.

Plan III: The member may make application for a regular Retirement Annuity contract in a large, old established, responsible insurance company, approved by the Board of Trustees of the College.

Permanent Total Disability: A feature of the contract or policy provides for waiver of premiums and the payment of the full amount of the annuity which would be paid in case of retirement in event the member becomes totally and permanently disabled before reaching age 65.

The cost of the permanent total disability feature will be paid by the College for all members not over 55 years of age (nearest birthday) who may make a selection of the third investment method. In event of such permanent and total disability no further payments are required by the member under the contract or policy. Members applying for this feature must give satisfactory evidence of good health to the insurance company.

UNIVERSITY OF WISCONSIN, ALUMNI RESEARCH FOUNDATION.—To promote, encourage, and aid scientific investigation and research

at the University of Wisconsin and to assist in providing means and machinery by which scientific discoveries of the faculty, the staff, alumni, and students may be applied and patented, is the purpose of a newly organized corporation which has taken for its name the Wisconsin Alumni Research Foundation. This corporation, the management of which rests in a board of five trustees, has no capital stock, nor does it ever expect to pay either dividends or profits. The Research Foundation was organized following the discovery by Professor Harry Steenbock that antirachitic properties can be imparted by irradiation to foods in which this factor is lacking or deficient in amount. Dr. Steenbock is the first scientist to assign his invention to the foundation. It has been reported that the trustees have negotiated a contract with the Quaker Oats Company under the terms of which patent applications and possible litigation and the designing and construction of the necessary machinery will be financed by the latter. In return the Quaker Oats Company is granted the license to the Steenbock invention, for which it will pay a royalty which by the third year following the beginning of its commercial use will amount to $60,000 annually.

Science, vol. LXVI, no. 1717

YALE SCHOOL OF LAW, HONORS COURSES.—The summer session of the School is to be made an honors session. Those admitted will be allowed to do independent work, individually and in small groups, free from classroom routine. If it is found possible to conduct the entire summer session on an honors basis the plan may be extended to the regular sessions of the school where now, as in all other law schools, only third-year men with high standing are permitted to do honors work.

YALE UNIVERSITY, THE LINGUISTIC INSTITUTE.—Plans for an experiment to be tried at Yale University by the Linguistic Society of America have been announced. Under the direction of Professor Edgar H. Sturtevant, of Yale, assisted by Professor Reinhold E. Saleski, of Bethany College, a Linguistic Institute will be held at New Haven for six weeks, from July 9 to August 17, 1928. Twenty-three scholars from fourteen institutions in this country and abroad have agreed to gather at Yale and to offer a wider range of linguistic courses than has ever been given at one time by any university in this country or elsewhere.

There will be courses in such languages as Sanskrit, Pali, Oscan, Old Provencal, Old Spanish, Old Portuguese, Old French, Early

Irish, Early Welsh, Gothic, Old Norse, Old High German, Old English, Lithuanian, Hittite, Hebrew, Assyrian, Arabic, and Turkish. Other courses will treat special dialects, such as Homeric Greek, other Greek dialects, Old Latin, and American English. The history of certain languages, including Italian, German, and English, will be outlined. Some of the instructors will lecture on the comparative grammar of Greek and Latin, of the Romance languages, of the Germanic languages, and of the Semitic languages. Other topics to be considered are phonetics, the meaning of words and sentences, syntax, and the methods of studying unrecorded languages such as those of the American Indian...

In addition to bringing together teachers and students, the institute will encourage research in language, just as the Marine Biological Laboratory at Woods Hole, Mass., encourages independent study of botany and zoology. Linguists are invited to attend the session in order to carry on their own studies where they can have access to a good library and, at the same time, enjoy stimulating contact with others of like interests.

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MEMBERSHIP

MEMBERS ELECTED

The Committee on Admissions announces the election of one hundred and ninety-three members, as follows:

Agnes Scott College, Ruth J. Pirkle; **American University,** Edward P. Devine; **Antioch College,** M. N. Chatterjee, Ondess L. Inman; **Baker University,** Annabel Newton; **Berea College,** Thomas A. Hendricks, Waldemar Noll, J. W. Raine; **Bethany College,** Pearl Mahaffey; **Bryn Mawr College,** Henry J. Cadbury, Prentice Duell, Joseph E. Gillet, Margaret Gilman, Hornell Hart, Marguerite Lehr, Vito G. Toglia, D. V. Widder; **Bucknell University,** Delbert M. Mann; **University of Buffalo,** Henry T. E. Perry, Julius W. Pratt, Ralph C. Epstein; **Carthage College,** Alice L. Kibbe; **Central College,** L. G. Abernathy, A. H. Brunelle, E. C. Buckner, F. E. Burcham, Frederick A. Culmer, E. A. Jenner, Ira G. Morrison, E. P. Puckett; **Centre College,** Edward A. H. Fuchs; **University of Chicago,** Mayme Irwin Logsdon; **University of Cincinnati,** Joseph H. Kindle; **Coe College,** Erik McK. Eriksson; **Cornell College,** Ermina Mills; **University of Delaware,** T. A. Baker, R. W. Heim, Carl J. Rees; **University of Denver,** Ira E. Cutler, G. W. Gorrell, Ruth F. Holzman, William H. Hyslop, George A. Warfield, C. E. Werling, Eva F. Williams; **University of Detroit,** Denis R. Janisse, C. H. Seehoffer; **Duke University,** Wilburt C. Davison; **George Washington University,** Chandler B. Beall, Paul W. Bowman, Truman Michelson; **Gettysburg College,** C. F. Malmberg, Bertram H. Saltzer; **Hamline University,** Erwin C. Paustian, H. Osborne Ryder; **Hillsdale College,** Harold M. Davidson, E. B. Penrod, David McC. Trout; **Hood College,** Helen E. Beresford, Majorie K. Stackhouse, Laura A. Ward; **Hunter College,** E. Adelaide Hahn; **University of Iowa,** Alice A. Brigham, Marjorie Camp, M. F. Carpenter, Earl L. Crum, Charles A. Hawley, J. J. Hinman, Jr., Arthur O. Klaffenbach, R. A. Kuever, Avery E. Lambert, Fred L. Lazell, Walter Leon, W. Ross Livingston, E. M. MacEwen, Catherine Macartney, Erwin K. Mapes, Norman C. Meier, Norman F. Miller, Everett D. Plass, Charles L. Robbins, Arthur Steindler, Charles H. Woolbert; **University of Kentucky,** Gardner C. Basset, Paul L. Boynton, R. D. McIntyre, A. J. Olney, W. R. Sutherland, A. Vandenbosch; **Lafayette College,** Willard L. Wachter, Carl W. Ziegler; **Lake Forest College,** Carleton Cum-

mings, Harold Curtis, Elizabeth H. Gordon, Ernest A. Johnson, Garrett H. Leverton, George Sleight, Ronald B. Williams, Sterling P. Williams; **Lehigh University,** John Paul Jones; **Louisiana State University,** Homer L. Garrett, W. H. Gates, Henry V. Howe, Leo J. Lasselle, A. T. Prescott, Albert G. Reed, C. H. Stumberg, E. M. Violette; **Marietta College,** G. S. Chapin, Philip L. Rea; **University of Maryland,** Harry J. Patterson, Adele H. Stamp; **Miami University,** Wallace R. McConnell, Edwin S. Todd, Irene Williamson; **Muhlenberg College,** Henry R. Mueller; **Nebraska Wesleyan University,** William G. Bishop, Earle E. Emme, Bertram E. McProud, Claude J. Shirk; **New York University,** Anna Y. Reed; **North Dakota Agricultural College,** Gilford J. Ikenberry; **Northwestern University,** E. F. Albertsworth, Vaughn Bryant, Ralph B. Dennis, H. G. Guthmann, W. H. Hass, Clarion D. Hardy, Marion O. Hawthorne, Virgil B. Heltzel, R. A. Kent, Frank G. Lankard, Edwin E. Voigt, Chester E. Willard; **Oberlin College,** S. Hudson Chapman; **Ohio State University,** Lydia Ann Clark, M. B. Ogle; **University of Oklahoma,** Frances I. Evans, Joe E. Moose, James C. Powell, J. T. Salter, O. W. Walter, M. L. Wardell, Herbert Woodrow; **Oregon State College,** H. H. Gibson, Edith C. Kuney; **Park College,** W. F. Sanders; **Pennsylvania State College,** Jean D. Amberson, C. S. Anderson, Edwin F. Bamford, Philip B. Bucky, W. E. Butt, H. Watson Stover, C. B. Spotts; **University of Pittsburgh,** W. M. Parrish; **University of Southern California,** William G. Angermann, Erwin T. Mohme, Walter M. Rudolph; **Smith College,** Priscilla Fairfield, Elliott M. Grant; **Syracuse University,** Theodore Koppányi, Ralph L. Sackett, Herbert N. Shenton; **Temple University,** W. Brooks Graves, Paul S. Keiser, C. H. Smeltzer; **University of Texas,** Theodore Stenberg; **Trinity College,** Louis H. Naylor; **Union College,** W. W. Bennett, Frederick L. Bronner; **University of Vermont,** John B. DeForest, Lester M. Prindle; **Wesleyan College,** Iris L. Whitman; **University of Wisconsin,** Curtis Merriman, Richard B. Quintana, Ruth Wallerstein; **Willamette University,** Earl T. Brown, Herman Clark; **Yale University,** Rudolph J. Anderson, W. J. Cowper, Harry A. Curtis, George R. Cowgill, Robert G. Eberhard, Andrew Keogh, Ernest O. Lawrence, Sidney M. Newhall, G. E. Nichols, F. S. C. Northrop, Grover F. Powers, Blair Saxton, DeForest VanSlyck, Robert K. Warner, Clark Wissler.

NOMINATIONS FOR MEMBERSHIP

The following seventy nominations are printed as provided under Article IV of the Constitution. Objection to any nominee may be addressed to the Secretary, H. W. Tyler, Cambridge, Mass., or to the Chairman of the Committee on Admissions[1] and will be considered by the Committee if received before April 20, 1928.

The Committee on Admissions consists of E. C. Hinsdale (Mt. Holyoke), *Acting Chairman;* W. C. Allee, Chicago; A. L. Bouton, New York; E. S. Brightman, Boston; A. L. Keith, South Dakota; A. O. Lovejoy, Johns Hopkins; F. A. Saunders, Harvard.

William Asker (Education), South Dakota State
Theodore Baird (English), Amherst
Mark Balderston (Physics), Lafayette
E. C. Baldwin (English), Illinois
E. E. Bayles (Education), Central Missouri
Maude Beamer (Foreign Languages), Central Missouri
Charles D. Beers (Zoology), North Carolina
J. Alfred Benner (Mathematics), Lafayette
Julius Seelye Bixler (Biblical Literature), Smith
Bert N. Blakeslee (Architecture), Detroit
Harry E. Brown (Physical Education), Lafayette
Elizabeth Callaway (Foreign Languages), Central Missouri
Emma Canthorn (Latin), Missouri
Howard W. Church (Modern Languages), Lafayette
Lawrence Clark (Economics), Washington State
Earle R. Closson (Modern Languages), Lafayette
Harry A. Deferrari (Modern Languages), Maryland
L. Eugenia Deller (Music), Central Missouri
Albert F. Dolloff (Biology), William and Mary
A. E. Drucker (Mines), Washington State
Emily H. Dutton (Latin and Greek), Sweet Briar
L. R. Eckardt (Philosophy), De Pauw
Ralph W. Gelbach (Chemistry), Washington State
Ruth Fitzgerald (English), Central Missouri
Tomlinson Fort (Mathematics), Lehigh
W. A. R. Goodwin (Religious Education), William and Mary
Gladys Goss (Art), Central Missouri
Ina May Greer (English), South Dakota State

[1] Nominations should in all cases be presented through the Secretary, H. W. Tyler, 222 Charles River Road, Cambridge, Mass.

Paul P. Harbrecht (Physics), Detroit
Albert S. Harding (History), South Dakota State
Harry F. Harrington (Journalism), Northwestern
Claude H. Heithaus (Classics), Detroit
Carroll D. W. Hildebrand (Philosophy), De Pauw
Homer C. House (English), Maryland
Tucker Jones (Physical Education), William and Mary
Thorsten V. Kalijarn (Political Science), New Hampshire
Harold J. Kennard (Graphics), Lafayette
Lester K. Kirk (Statistics), Detroit
Joseph M. Klamon (Economics), Carnegie
J. T. Law (Political Science), Pennsylvania State
Clarence G. Lowe (Classics), Nebraska
Catherine F. MacLaggan (Foreign Languages), South Dakota
W. C. MacQuarrie (Physics), Lafayette
George A. Menge (Chemistry), Lafayette
Erwin F. Meyer (History), Colorado
Howard A. Meyerhoff (Geology), Smith
Harry M. Miller, Jr. (Zoology), Washington (St. Louis)
Nathan Miller (Economics), Carnegie
W. E. Milligan (Metallurgy), Yale
William M. Murphy (Education), Marquette
Finley F. Neal (Physics), Southern California
George L. Nichols (Music), Ohio Wesleyan
Delbert Oberteuffer (Physical Education), Oregon
Bessie L. Pierce (History), Iowa
W. M. Pierce (Physics), Williams
Albert T. Poffenberger (Psychology), Columbia
Grover F. Powers (Pediatrics), Yale
Richard B. Ransom (Education), Bucknell
A. Pauline Sanders (Home Economics), Seton Hill
Helen C. Schmadel (Education), Seton Hill
J. Lyman Sheean (Chemistry), Carnegie
R. D. Sloan (Electrical Engineering), Washington State
Theodore C. Smith (History), Williams
J. T. Spann (Mathematics), Maryland
Rufus T. Stephenson (Greek), De Pauw
Terrell Louise Tatum (Spanish), Chattanooga
Effie J. Taylor (Nursing), Yale
Lilah M. Vaughan (Education), Boston
Carl J. Warden (Psychology), Columbia
Edgar L. Yeager (Psychology), Indiana